

Analysis of the Immunodiagnostic and Molecular diagnostic market in India

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ABSTRACT

Investigation of In-vitro indicative examination was done by the examination of homegrown market. We did relatively investigation of two primary portions Immunodiagnostic and Molecular demonstrative reagents for field-tested strategy. The field-tested strategy is for the foundation and going into the homegrown market with new section for diagnostics market. After SWOT examination we got found that we have chance to enter in this serious market with solid vision and mission, to give the moderate and imaginative indicative unit without bargaining quality.

To assemble State of the workmanship for the advancement of Diagnostic test packs, in the field of Biochemistry, Immunology and hematology units fabricating. The broad examination involvement with the advancement of Diagnostic testing units that cooks in Biochemistry, Immunology, and Hematology. We like to make these specialty Diagnostic testing packs items having restricted rivalry and would endeavor to be an innovator in the Diagnostic test units region.

Key words: Diagnostic Market, Invitro, Testing, Strategy

INTRODUCTION:

In vitro analysis is a procedure wherein incorporated a reagent and instrument utilized for finding for a few infections by the human body liquids blood and tissue. In vitro conclusion fragmented in the diverse area fundamentally incorporated the immunodiagnostic, haematology, organic chemistry and sub-atomic diagnostics. The principle application incorporate invulnerable smearing test pregnancy test, ELISA test and safe histo concoction test, horizontal stream test (dipstick or fast test) are the prevalent in the immunodiagnostic. Every one of the sections additionally partitioned by the trial of no

of maladies through reagent and indicative instrument.

Immunodiagnosics is a part of in-vitro determination that manages the conclusion of a few sicknesses based on the antigen immunizer response. The idea of immunodiagnostic was presented in the 1960 for serum insulin identification. A subsequent test was created in the year 1970 for thyroxin determination. Increment request of the in-vitro analysis because of the ascent mindfulness toward the more undermined ailments which expected to help the IVD market size.

In vitro indicative items are those reagents, instruments, and frameworks expected for use in analysis of sickness or different conditions, including an assurance of the condition of wellbeing, so as to fix, moderate, treat, or forestall illness or its squeal. Such items are proposed for use in the assortment, readiness, and assessment of examples taken from the human body.

Administrative Authority: IVDs are clinical gadgets as characterized in area 210(h) of the Federal Food, Drug, and Cosmetic Act, and may likewise be natural items liable to segment 351 of the Public Health Service Act. Like other clinical gadgets, IVDs are liable to premarket and post market controls. IVDs are additionally dependent upon the Clinical Laboratory Improvement Amendments (CLIA '88) of 1988.

Classification of In-vitro diagnostic market segment:

In vitro diagnostic segment mainly classified into the four segments, it differentiated by product, by technique, by application, and by geography. The diagnostic market segment in that we focus mainly on the In vitro diagnostic technique and reagents.

Table-1 Classification by technique:

Immunodiagnostic:	Molecular diagnostics
1. Enzyme-linked ImmunoSorbent assay (ELISA)	1. Polymerize chain reaction (PCR)
-Chemiluminescence Immunoassay (CLIA)	2. Isothermal nucleic acid technology
-Fluorescence immunoassay (FIA)	3. Hybridization
-Colorimetric Immunoassay (CI)	4. DNA diagnosis
2. Rapid Tests	5. Microarray
3. Enzyme-Linked ImmunoSpot (ELISPOT)	Clinical Chemistry
4. Radioimmunoassay (RIA)	1. Basic metabolic panel
5. Western blot	2. Liver panel
Hematology	3. thyroid function panel
Tissue Diagnosis	4. electrolyte panel
Other IVD Technique	5. lipid profile

Immunodiagnostic-

Disease diagnostics and pathogen detection, a primary component of any health management programme, is also helpful in monitoring disease parameter of human body. Immunodiagnostic simply it describe the reaction between the antibody-antigens, reaction like ELISA, Immunoassay, RIA these are the type which describe the immunodiagnostic concept.

LITERATURE REVIEW:

Immunodiagnostic and atomic symptomatic some development procedures are utilized in current day for recognition of neuro cysticercosis, echino cocciosis, cystic and alveolar. Normally ELISA test is follow for pathology testing. Neospora caninum has increased extensive consideration its function in the etiology of cow-like premature birth. Because of its nearby phylogenetic relationship with toxoplasma gondii, individual unequivocal differential conclusion merits exceptional thought. So as to give symptomatic execution of the atomic demonstrative and immunodiagnostic strategy for study ailment, by utilizing ELISA and PCR technique.

The Indian diagnostics market can be extensively partitioned into gear, reagents and administrations. The administration area is to a great extent sloppy, with most of players being bunched in suburbia and metros. Anyway an unmistakable and organized arrangement is being built up so as to have better guidelines and appropriate definition for the market. The size of the Indian in vitro Diagnostics (IVD) market is assessed to be 531 m USD in 2011; by 2016 it is relied upon to extend to roughly 900 m USD, developing at a yearly development pace of 18% (Frost and Sullivan). A significant contributing variable towards this development is the extension of corporate clinics. Also, non-transmittable infections, for example, diabetes are no longer sicknesses of the rich, and are spreading quickly to provincial territories. This is another contributory factor towards the development. Hence, with a compound yearly development rate (CAGR) of ~18%, IVD has risen as one of the most productive business sectors in the Indian medical services industry. Significantly, in the coming a long time there will be probably increment in the quantity of medical coverage approaches. Accordingly, increasingly more medical coverage organizations will facilitate with the different symptomatic labs.

The worldwide medical care and diagnostics are not altogether different, yet the thing that matters is in structure contrasted with how is it in India. So on the off chance that you take a gander at the worldwide analytic market, it's presumably somewhere close to

42-45 billion USD. The majority of the numbers originate from created markets of US, Europe, Japan contrasted with that while there are varying evaluations of diagnostics market in India in light of the fact that there is no proper method of catching it. So casual gauge between a pathology and radiology will be far lesser than might associate with 8-9 billion dollar, perhaps 50% of it will be pathology and half of it will be radiology.

The nature of clinical gadgets is administered by administrative specialists of the separate nations. The guidelines are expected to ensure the dangers related with configuration, assembling and bundling of clinical gadgets. India is one of the best twenty business sectors for clinical gadgets on the planet and the fourth biggest market in Asia. The National Medical Device Policy 2015 is built out by the Government of India to fortify the clinical gadget market and diminishing reliance on bringing in the clinical gadgets. In vitro symptomatic (IVD's) are utilized for the invitro assessment of examples got from the human body exclusively or primarily to analyze the issues. The Indian clinical gadget area is about USD 4.9 billion in which of 53% are IVD's. The in-vitro analytic warning advisory group (IVDAC) is set up by Government of India to offer guidance in issues identified with IVD's to DCGI and affirm results of IVD's. The Schedule M-III and M-IV of D and C act 1940 and rules 1945 are driven down, which gives data on quality administration framework and GMP practices and prerequisites of premises, hardware and plant for In vitro demonstrative reagents and packs separately. Enrollment technique of IVD's, regular accommodation design for enlistment, naming necessities, administrative situation and suggestions to the legislature has been referenced.

Undiscovered and blundered tuberculosis (TB) keeps on filling the worldwide TB pandemic. Quick, precise and early analysis of TB is along these lines a need to improve TB case discovery and interfere with transmission. Albeit extensive upgrades have been made in TB diagnostics, there are two significant holes in the current diagnostics pipeline: (1) absence of a straightforward precise purpose of-care test that can be utilized for quick analysis at the essential consideration level; (2) absence of a biomarker (or blend of biomarkers) that can be utilized to recognize idly contaminated people who will profit most from preventive treatment. As of now accessible business serological (immune response recognition) tests are off base and don't improve quiet results. Notwithstanding this proof, many serological tests are sold and utilized in nations (for example India) with powerless administrative frameworks, particularly in the private division.

Market Summary:

The Indian IVD market size is pegged at 6500-7000 crore, with a CSGR of 7.2 % in 2019. Indian immunodiagnostic market size is arrived at 400-550 USD Million and hematology is second biggest market increased about roughly 300 USD Million. The sub-atomic indicative market is required reach to around 200 USD millions of every long term. Organic chemistry market is reached to 264 USD Million out of 2018 and expected to arrive at 282.84 USD million out of 2019.

Driver and Challenge:

Increment way of life related maladies and individuals are more mindfulness toward wellbeing, segment changes, developing clinical protection, and clinical re-appropriating. Expanding reasonableness and advancement, innovative work everything made the development of indicative market conspicuously.

In addition increment the import of indicative gadget and reagent from the china, Japan. The out nation prevailing the Indian market, reason is that distinction in import obligation on indicative units for public and private segment and pool of accreditation/permitting affirmation of analytic focuses

Rules and guideline:

Symptomatic hardware's market is managed by both focal and state government. Significant overseeing authority incorporate Directorate General of Health Service, Central Drug Standard Control Organization (CDSCO) And Drug Controller General of India (DCGI)

Competition:

Indicative test market is profoundly divided with a significant number of coordinator. The homegrown market is secured by some significant player like Bharat biotech, Tulip, Transasia, Avantor, and J Mitra etc

OBJECTIVES:

Identifying challenges that symptomatic industry is confronting and to build up a plan of action that can convey moderate indicative unit and practical model item.

To create immunodiagnostic and atomic indicative strategy model for Promea Biotech, Hyderabad for foundation of new portion in that industry.

Comparatively concentrate about immunodiagnostic and atomic analytic market of India, As well as investigation of in vitro symptomatic market of the worldwide contender.

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Mission: To convey moderate analytic test packs for buyer without bargaining quality.

Research Methodology:

Secondary market study:

The solid strategy, consequently, makes the examination and investigation generally dependable and ensures sound business arranging. The exploration continues are the consequence of great information, master perspectives, and investigation and high worth free assessments.

The optional market study was finished by the group, the information gathered from the accompanying sources. Optional information is gathered from written works, autonomous magazines, diary, authoritative records, government periodicals, site, sites, papers, organization's yearly reports and examination reports by specialists have been surveyed for better market understanding and serious knowledge. What's more credible diaries, clinical diary, exchange affiliation's deliveries, and government sites additionally have been checked on for producing high-esteem industry bits of knowledge.

- Company SEC recording, yearly reports, organization sites, intermediary and money related reports
- Patent and administrative information bases for comprehension of specialized and legitimate turns of events
- Scientific and specialized compositions for item type data
- Regional government and factual information bases for large scale examination
- Authentic new articles, web-projects, and other related deliveries
- External and inward restrictive information bases and key market marker

PRESENT WORK:

IVD MARKET:

Indian In-vitro suggestive market assessment:

In-vitro suggestive market in India is generally separated which overpower the IVD market with 65-70 % share. The Indian IVD instruments and reagents market is regarded at more than Rs. 6000 Cr. in 2017 and is depended upon to have an exacerbated yearly improvement rate (CAGR) of 20 percent. Immunodiagnostic market is depended upon to show up at 17836 Million dollar by 2022 with a CAGR of 7.3% during measure period 2016-2022.

In-vitro market in India is overpowered by the new associations by reagent and instrument. Local player has making the extraordinary circumstance by the making monetarily adroit and incredible quality thing. The fundamental contemplations behind that the improvement of the Indian in-vitro diagnostics market are the high occasion of genuine unending

ailments and extending care toward the end. In vitro logical market chiefly partitioned into the natural science, immunoassay and hematology. Hematology is the third greatest segment in the Indian IVD market. Supreme in vitro suggestive market salary from the 2017 to 2021 given in underneath table. Expected pay in the year 2021 is about 5831.76 USD million.

Table-2 Total revenue market of India (USD million).

	2017	2018	2019	2020	2021
India	4645.12	4917.62	5207.11	5512.26	5831.76

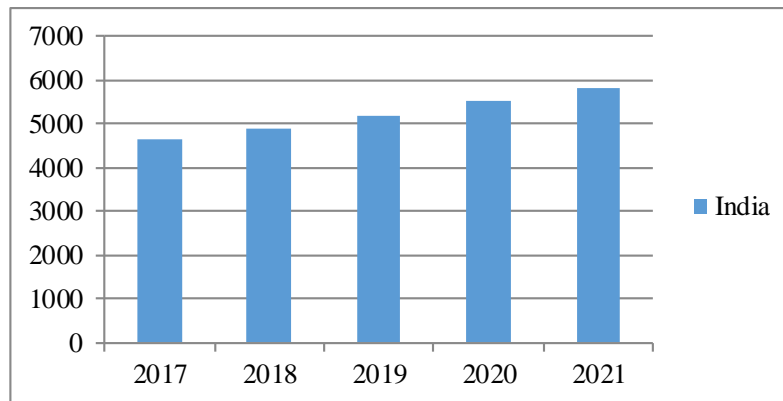


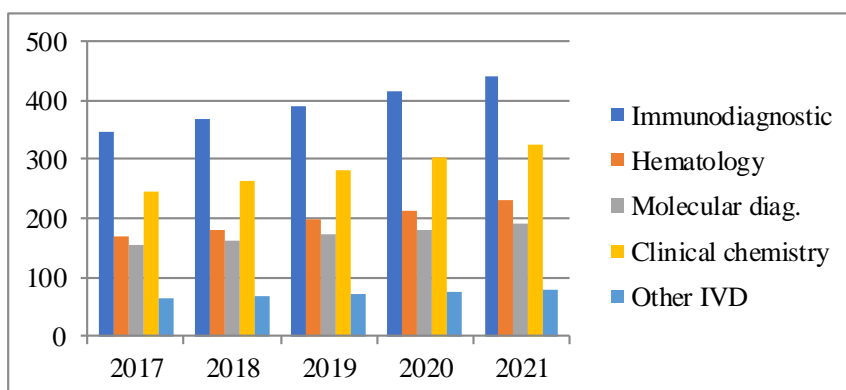
Figure-X-axis indicates year and Y-axis represent revenue in USD million.

Domestic in-vitro market by technique (USD Million)

The In-vitro market fragment is demonstrated the significantly developing immunodiagnostic section which came to about 368.55 USD Million in the year 2018 expected to arrive at 440.42 USD Million in estimating period. The second biggest organic chemistry market is unmistakably developing; it is reached about the 263.75 USD Million out of long term. Followed by hematology is the third biggest fragment. The general expected all out is 1193.65 USD in present year.

Table-3 Indian in-vitro market by technique (USD Million)

	2017	2018	2019	2020	2021
Immunodiagnostic	346.08	368.55	392.38	417.65	440.42
Hematology	167.87	181.95	197.11	213.42	230.97
Molecular diag.	153.57	162.19	171.22	180.69	190.62
Clinical chemistry	245.88	263.75	282.84	303.23	324.98
Other IVD	64.94	68.98	72.11	74.38	77.72
Total	1049.80	1120.08	1193.65	1271.72	1353.53



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Figure- Indian In-Vitro market by technique

Indian in-Vitro diagnostics market by product:

The accompanying diagram demonstrate the all-out market of reagent and the instrument, chart which show the all-out reagent esteem in term of the crore expanded or it shows exponentially in the chart than the instrument. The main Indian drug store which more spotlight on the test unit which moderate and more accessible to the patient. The Indian immunochemistry market in 2017 is assessed at Rs. 2170 crore. The market for instruments and reagents is assessed at Rs. 1550 crore, ELISA packs at Rs. 330 crore, and quick tests at Rs. 290 crore. The reagents in 2017 earned incomes of Rs. 1385 crore, and instruments Rs. 165 crore.

Table-4.Total Indian market by product (USD Million)

	2017	2018	2019	2020	2021	CAGR%
Reagent	617.11	652.68	690.09	729.42	771.72	5.6
Instrument	312.13	337.09	363.92	395.71	423.63	7.9
Software	123.60	132.35	141.66	151.60	162.19	7.1
Total	1050.81	1120.09	1193.67	1271.73	1354.53	6.6

The above table is clarified about the reagent, instrument and programming market in India. The reagent market an incentive in the 2017 is about 617.11 USD million and year 2018 having the 652.68 USD million and current long term have the 680.09 USD million, with expected determining market esteem is about 771.72 USD Million for long term. The compound yearly development rate is 5.6% for the consolidated long term market. The development pattern is clarified in the beneath diagram with looking at the five yea all information having expanding CAGR in rate.

Demonstrative method portion in that the immunology reagent market shows generally 33% market esteem. Second most market is natural chemistry which shows about 31% market esteem. We could examination by the accompaning diagram the approx. 61% market income we got by these two section and which is driving in anticipating period.

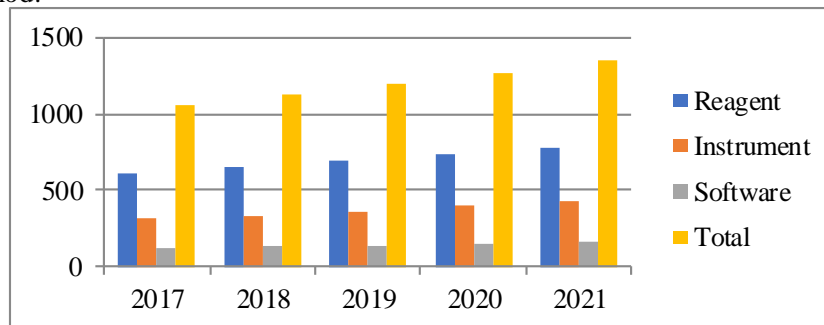


Figure-Indian market by product, x-axis indicate year and y- axis indicate revenue

Revenue of product by Technique in Indian Crore:

The Below three segments organic chemistry, immunology, and hematology which partitioned into the instrument and reagent. The market is around 1450 for natural chemistry reagent, 1551.2 for the immunology reagent and 500 for hematology individually for 2016 to long term. Given pie graph appeared in that significant market is secured by the immunology portion and followed continuously biggest market is secured by natural chemistry section and third biggest market is hematology in the reagents. In the instrument portion organic chemistry having top market followed by the immunology and hematology sections.

Table-5.Revenue of product by Technique in Indian Crore

Segments	Type	FY2016	FY2017	FY2018
Biochemistry	Instrument	275.2	265	292
	Reagent	1150	1287	1450
Immunology	Instrument	149	165	171.6
	Reagent	1234	1385	1551.2
Hematology	Instrument	352	387	290

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	Reagent	600	670	500
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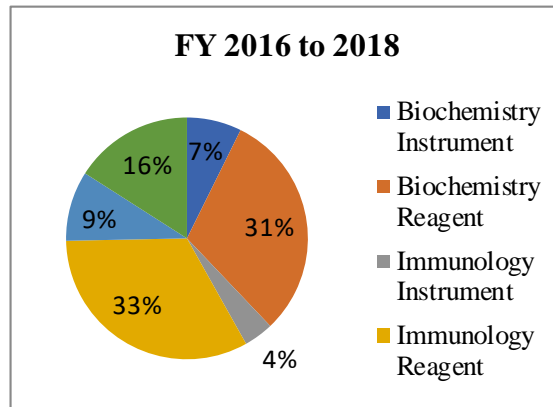


Figure-.product revenue by technique

Diagnostic Test Market (Crore)

The Indian market of the Elisa is compared with the rapid test from last three year. Following graph which indicate the Elisa is more commonly utilized in the market for treatment and diagnosis for antigen -antibody based diseases.

Table-6.Test market Crore

	Year 2016	Year 2017	Year 2018
ELISA	306	300	342
RAPID TEST	225	290	315

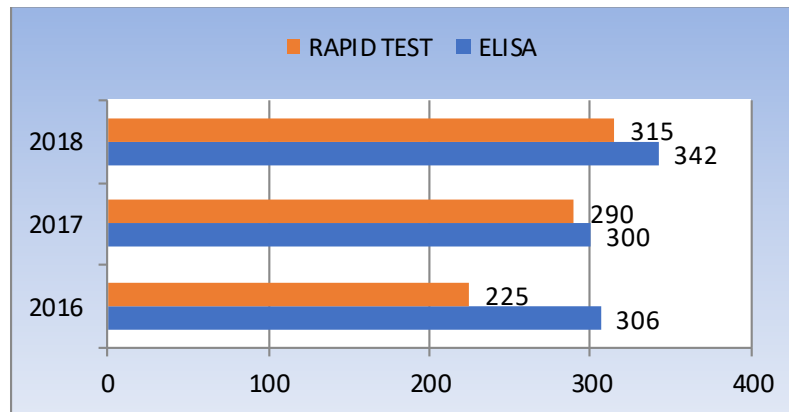


Figure-.Y axis represents the year and x-axis represents the value in Indian crore

GLOBAL IVD MARKET:

Global in-vitro diagnostic market by technique (USD Million)

The immunodiagnostic section was most elevated commitment in the market, with 21980.23 USD Million in year 2018 expected 4.8% CAGR reach to the vaer2025. The hematology and the atomic analytic portion commitment in market, with 10920.08 and 9842.83 USD million in the year 2018.Total in vitro demonstrative market was 67587.39 USD million of every 2018 and expected to arrive at 77789.50 during determining period with 4.9% CAGR in the 2021.

Table-7.IVD Market by Technique

	2017	2018	2019	2020	2021	CAGR%
Immunodiagnostic	20956.94	21980.23	22995.60	24076.47	25209.39	4.8
Hematology	10324.37	10920.08	11645.17	12393.73	13198.78	6.5
Molecular Diag.	9467.78	9842.83	11635.19	10608.32	11013.05	3.9
Clinical chemistry	15279.16	16127.55	17002.14	17932.26	18907.94	5.5

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Other IVD	4098.23	4219.57	4343.68	4468.35	4594.36	2.9
Total	64478.47	67587.39	70327.42	74238.41	77789.50	4.9

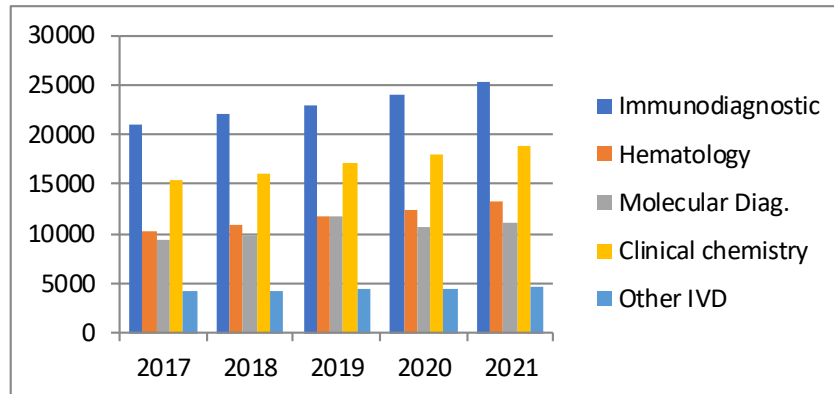


Figure 13-Global In-Vitro Market by Technique

Immunodiagnostic global market

Immunodiagnostic is a further subdivided into the immunoassay and immunochemistry technique. It is a biochemical reaction happen between the antigen ant antibodies, it also detect the protein and hormone. Given below graph indicated that the largest market acquired by the ELISA reagent having 12178.52 USD Million with expected CAGR is 4.8%. The second largest market is gained by the rapid test around 5455.39 USD Million with expected CAGR IS 5.8%.

Table-8.Global In vitro diagnostic market for immunodiagnostic (USD Million)

Type	2017	2018	2019	2020	2021	CAGR%
ELISA	11627.18	12178.52	12754.77	13456.80	13995.45	4.8
Rapid test	5157.17	5455.39	5769.76	5769.78	6449.78	5.8
RIA	1490.90	1537.10	1584.18	1634.09	1685.78	3.1
Western blot	770.55	802.53	835.73	871.19	906.91	4.2
Total	20957.84	21960.23	24078.47	24076.47	25209.38	4.8

Worldwide In-vitro market of the test reagents clarified underneath by bar diagram. The reagents in that basically center around the ELISA. Rapid test, and Immunoassay, as per given information we can watched the chart, the ELISA test Market is more and immensely developing from the 2017 to 2019 and it will reach to the 13995.45 USD Million in next long term with expected CAGR is 4.8 %. Likely the quick test market is second biggest market followed by the immunoassay and western smear reagent market is developing. Fast test income is about 12754.77 USD Million for present year (2019); it is gradually expanding than the long term 12178.52 USD Million. Radio immunoassay market is about 2584.18 USD Million of every long term with generally speaking 3.1% CAGR. Absolute market for the long term is about the 24078.47 USD Million and expected to reach up to 25209.38 USD Million with 4.8% CAGR.

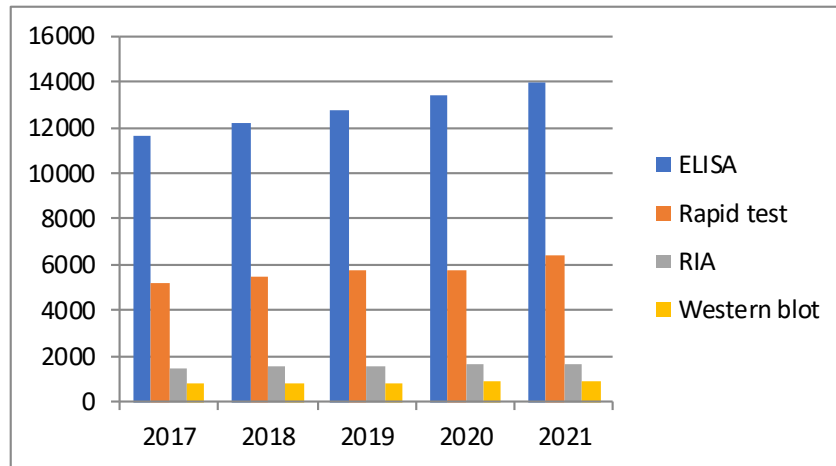


Figure-14 Market for Immunodiagnostic X axis represent year and Y axis represent revenue

Global molecular diagnostic market by type 2017-21 USD Million

The in vitro diagnostic market for molecular diagnostic was valued at 8589.44 USD million in 2018, and is projected to reach 8131.81 USD million by 2021, registering a CAGR of 3.8 % from 2017-21. The polymerize chain reaction segment was the highest contributor with 3860.77 USD million in 2017, and is estimated to reach 4515.97 USD million by 2021 at CAGR of 3.1% during the forecast period

Table-9 Market for Molecular diagnostic in USD Million

TYPE	2017	2018	2019	2020	2021	% CAGR
PCR	3860.77	3985.61	4244.68	4378.83	4515.97	3.1
INAAT	1809.96	1903.70	2008.11	2117.33	2231.50	5.3
Hybridization	1593.65	1654.56	1717.44	1782.38	1843.39	3.7
DNA diagnosis	713.71	748.53	785.82	832.65	862.45	4.7
Microarray	283.50	297.04	309.95	323.35	337.5	4.3
Total	8261.59	8589.44	9066	9434.54	8131.81	21.1

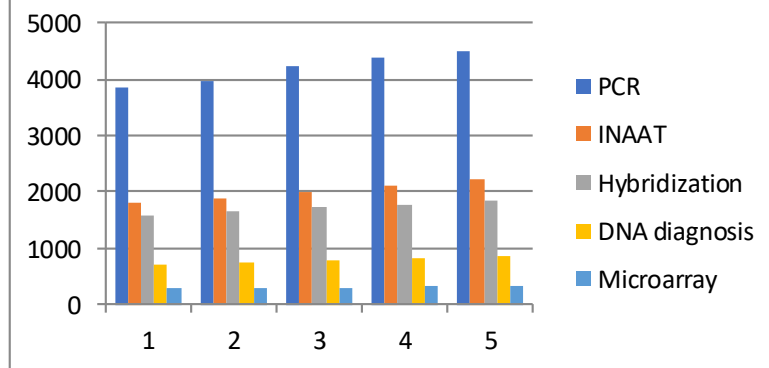


Figure- Molecular diagnostic market

COMPETITOR:

Table-9. Major top Player in the Indian market:

	J Mitra	Avantor	Bhat biotech	Tulip diagnostic	Trans Asia
Year of Est.	1996	1867	1994	1988	1979
Location	Delhi	Gurgaon	Bangalore	Goa	
Total revenue	1,46,72,13,120 Crore		Rs 29.78 crore (2018)	\$38.5 Million	1,500 Crore

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Income	542283278.9 crore	\$6200,000			
Export	45 countries	37 countries	30 countries	87 Countries	90 countries
New launches	i-Quant analyzer		PCR and i-PCR machine		Hematology range
Top brand	Tri dot HIV/HCV	Benesphera HCB	Pareekshak HIV, Pregna scan, Hepa scan,	IVD reagent, Carbogen,	
Price in Rs	6720 / 7200	2800	3700		
Merger & Aquisition		RFLC Ltd		Perkin E.	14 company acquired globally
No of Manufacturing facility	1 R&D facility and 2 mfg facility	2 R&D facility and 2 Mfg facility		2 Mfg facility	4 Mfg facility
patent	55	20			145

Top Global Player for IVD Market:

1. Abbott Laboratories

2. Becton, Dickinson & Company

3. BioMerieux SA

4. Bio-Rad Laboratories, Inc.

5. Danaher Corporation (Beckman Coulter Inc.)

6. F. Hoffman-La Roche Ltd

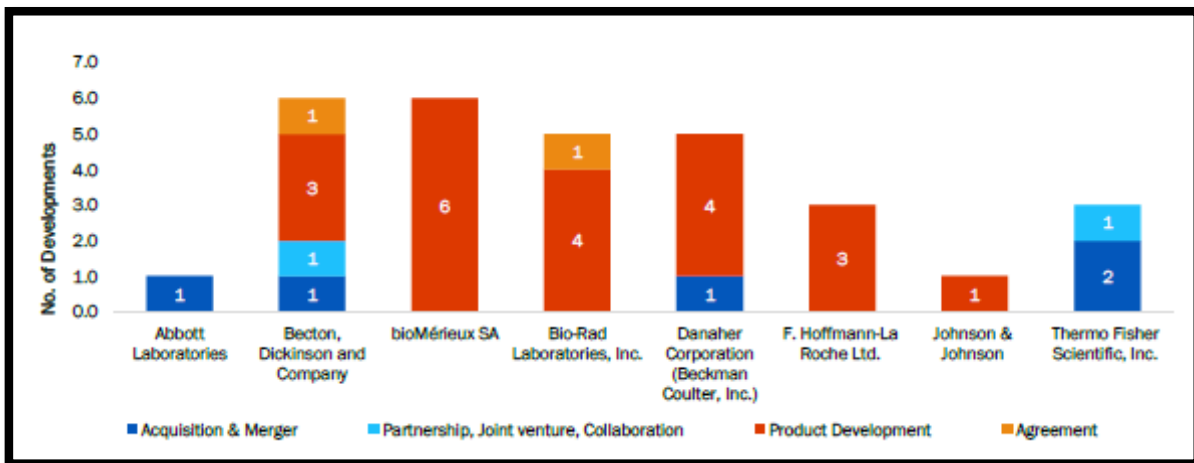
7. Johnson & Johnson

8. QIAGEN N. V.

9. Sysmex Corporation

10. Thermo Fisher Scientific, Inc

Top wining strategies: Nature and Type 2015-18



RULES AND REGULATION

Table-10 Regulatory body

Government authority	Operation
The directorate general of health services	Overseas activities of the Indian food and drug administration and general drugs standard control organization
FDA and CDSCO	Regulate the manufacturing of all diagnostic kits and reagent as it belongs to the category of drugs.

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Drug controller general of India (DCGI)	Responsible for approval of all licences of specified categories of drugs and diagnostics products
State drug offices/ state FDA 's	They monitor the quality of drug and diagnostic product that are manufactured by respective state units and those marketed in the state.

Licensing:

Manufacturer's need an import permit and itemenlistment affirmation to import indicative hardware. Basic symptomatic item is conceded by the DCGI and License is allowed after the review of the assembling unit. Non-basic item isn't needed to test mfg permit or bunch assessment and no examination is done by focal position. The application is filled by the state government as it were.

Granted the consent of permit under the D and C act 2018 by drug administrative warning board and under the Rule of (3) and sub rule (4).

Refreshed Regulatory rule (2018) under NDA and CDA, IVDD,

Indian controllers have given new direction on performing assessment (PER) of IVD gadgets subsequent to changing PER necessity. The direction distinguished sorts of IVD that necessary reports from affirmed gadgets testing labs, and gives a rundown of such research facilities licensed to lead IVD execution assessment.

The WHO has distributed a concluded administrative system for clinical gadgets, remembering for vitro indicative (IVD). It especially addresses nations that don't have their own guidelines for clinical gadgets.

SWOT ANALYSIS:

	Opportunities (External positive)	Threats (External negative)
Strengths (Internal positive)	<ul style="list-style-type: none"> • Targets the Niche market • Increase investment in innovation and invention • Increase the product facility line • Develop mfg facility • Quality of material and product should increase • Packaging material 	<ul style="list-style-type: none"> • Price of product, affordability • Skilled people and employment • Management skills • Production capacity • Quality of manufacturing instrument • Venture capitalist • Contract manufacturing
Weaknesses (Internal negative)	<ul style="list-style-type: none"> • Export the product in developing country • Cover pan India market • Marketing/ digital marketing • Minimise intermediate boundary • Connect distributor • Online selling of product 	<ul style="list-style-type: none"> • Establishment of new manufacturing plant • Launch the new product line • Target the new area or market • Market analysis

CONCLUSION:

Today the advancement of government strategies permit up to 100% FDI through programmed course. Making the most of this productive open door an expansion number no MNCs are setting up their assembling bases in India. It is horrible to realize that India loses Rs 60 Lakh crore consistently because of unexpected weakness care framework and 70% of the clinical gadgets bringing in from different nations, particularly from china and Japan. As we as a whole realize most Indians originate from unremarkable and helpless family foundation yet increment in wellbeing mindfulness individuals

couldn't get full clinical office. Here intend to more zero in on the moderateness and savvy, and quality indicative item are given to all poor one, so this is focus to us to decreasing the weight on import demonstrative and making the medical services reasonable. The modified obligation should be saved, on the grounds that the import obligation on completed item is bring down that than on crude material.

Strict rules and Regulatory rule ought to be improved which can neglected each maker for assembling the IVD item. Required to change the tax

collection arrangements, and framework, and all essential required office ought to be given to maker.

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Abbreviations

IVD	:	In- Vitro Diagnostic
USD	:	US Dollar
CAGR	:	Compound Annual Growth Rate
CLAI	:	Clinical Laboratory Improvement Amendments
CDSCO	:	Central Drug Standard Control Organization
DCGI	:	Drug Controller General of India
ELISA	:	Enzyme Linked Immune Sorbent Assay
RIA	:	Radio Immunoassay
HIV	:	Human Immunodeficiency Virus
HBV	:	Hepatitis-B
HCV	:	Hepatitis-C
FDA	:	Food Drug Administration
NDA	:	New Drug Application
DNA	:	Deoxyribonucleic Acid
RNA	:	Ribonucleic acid
PCR	:	Polymerize Chain Reaction