Seminar summary on 19.09.2025

TYROSINE KINASE INHIBITORS IN CANCER CHEMOTEHRAPY

- TK are important for functional cellular pathway and have been implicated in malignancy, inflammatory and immune-mediated diseases.
- **TYPES OF TYROSINE KINASE:**

RECEPTOR TYROSINE KINASE (RTK)

1. EGFR (Epidermal growth factor receptor) - cell proliferation, cell survival, cell growth and differentiation.
2. VEGFR (Vascular Endothelial growth factor receptor). (angiogenesis)
3. HER 1,HER 2 / neu type (Human epidermal growth factor receptor2), HER 3,HER 4.
4. PDGFR (Platelet- derived GF receptors.)
5. Insulin receptors (InsR)

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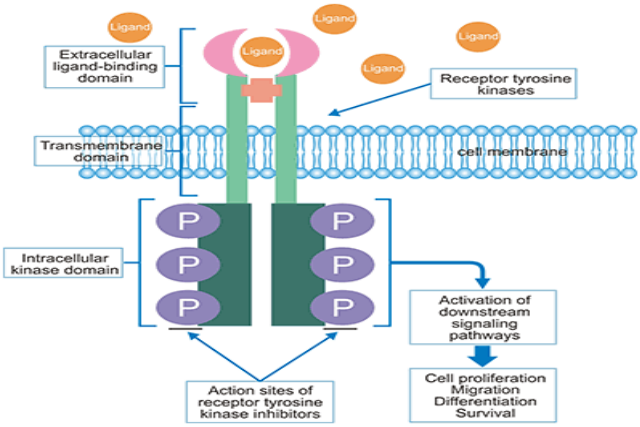
NON-RECEPTOR TYROSINE KINASE (NRTKs):

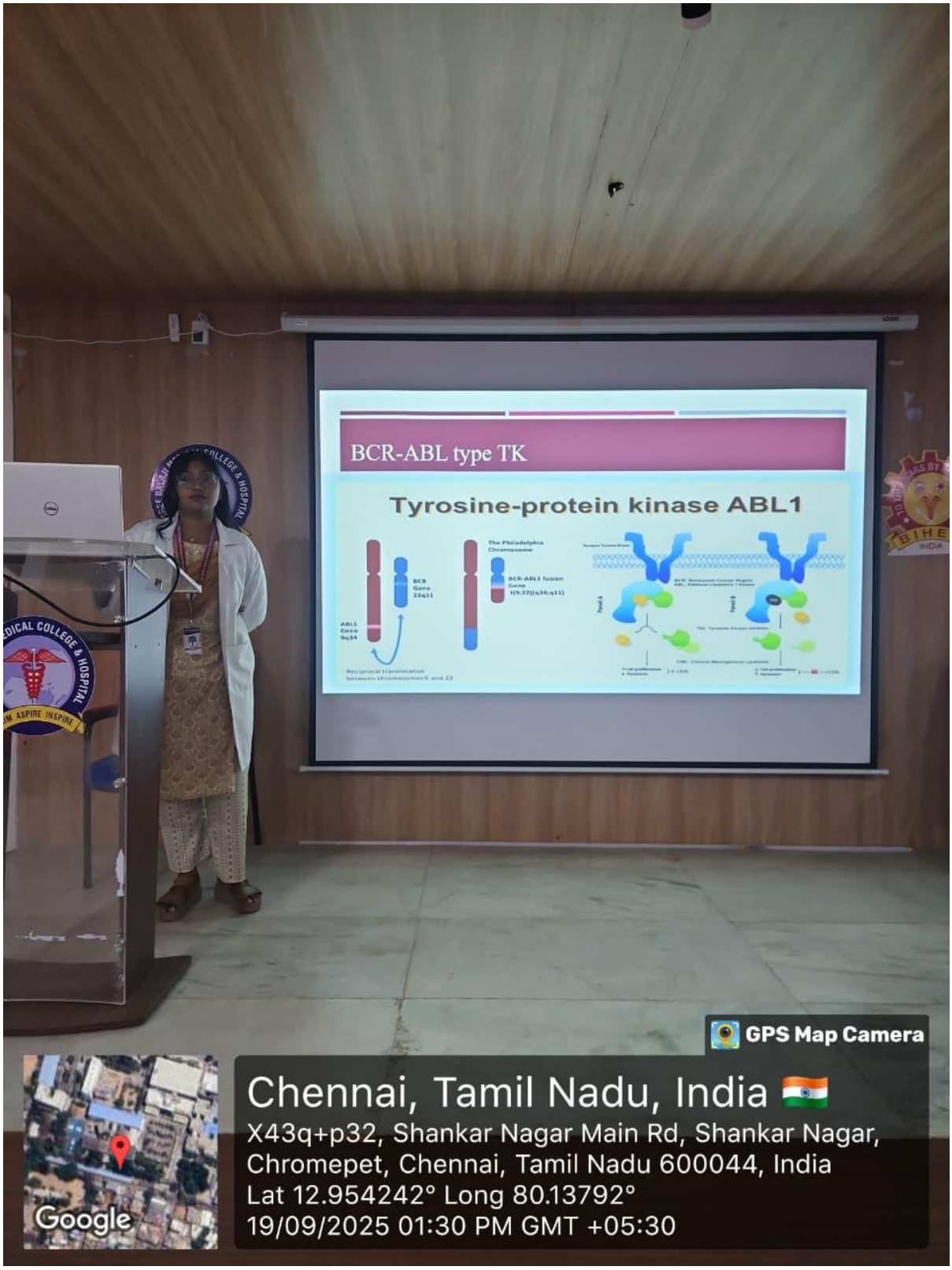
Cytoplasmic proteins that have tyrosine activity. They do not have receptor structure.

ABL, FES, JAK, ACK, SYK, TEC, FAK, SRC, CSK family.

TYROSINE KINASE MECHANISM OF ACTION:



- MOA – blocks ATP binding site and inhibits phosphorylation.
- Ends with –TINIB
- Route of administration oral except for some monoclonal antibodies which are given as injections
- Most common side effects – rashes , GIT-mucous ulcer, nausea, vomiting, diarrhea.


BCR-ABL type TK
Tyrosine-protein kinase ABL1
GPS Map Camera
Chennai, Tamil Nadu, India
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