

Drug Discovery & Design Internship

Deadline: 18/01/2026

Assignment 1

Submitted by Rashi Gupta

S.no.	Gene Symbol	Protein Name	Cancer type	PDB available?	PDB ID
1	EGFR	Epidermal Growth Factor Receptor	Non-small cell lung cancer	yes	7AEI
2	KRAS	K-Ras protein	Non-small cell lung cancer	yes	6YXW
3	ALK	Anaplastic Lymphoma Kinase	Non-small cell lung cancer	yes	6CDT
4	PDCD1	Programmed Cell Death protein 1	Non-small cell lung cancer	yes	2M2D
5	BRAF	B-Raf protein	Non-small cell lung cancer	yes	7MFE
6	ROS 1	Proto-oncogene tyrosine-protein kinase ROS	Non-small cell lung cancer	yes	3ZBF
7	MET	Hepatocyte Growth Factor Receptor	Non-small cell lung cancer	yes	1R1W
8	RET	RET protein	Non-small cell lung cancer	no	
9	ERBB2	Human Epidermal growth factor Receptor 2	Non-small cell lung cancer	yes	3WSQ
10	PD-L1	Programmed death-ligand 1	Non-small cell lung cancer	yes	8XR5
11	VEGFR	Vascular Endothelial Growth Factor Receptor	Non-small cell lung cancer	yes	5T89
12	ERCC1	DNA excision repair protein ERCC-1	Non-small cell lung cancer	yes	2A1I
13	MKI67	Ki-67	Non-small cell lung cancer	yes	1R21
14	MUC-1	CA-15-3	Non-small cell lung cancer	yes	2ACM

15	CEACAM5	carcinoembryonic antigen	Non-small cell lung cancer	yes	2QSQ
16	KRT19	Cytokeratin 19	Non-small cell lung cancer	no	
17	HIF-1alpha	Hypoxia-Inducible Factor-1	Non-small cell lung cancer	yes	9A9Z
18	OB-R	Leptin Receptor	Non-small cell lung cancer	yes	3V6O
19	NTRK1-3	High affinity nerve growth factor receptor	Non-small cell lung cancer	yes	1HE7
20	TACSTD2	Tumor-associated calcium signal transducer 2	Non-small cell lung cancer	yes	7E5M
21	NRG1	Neuregulin 1	Non-small cell lung cancer	yes	3U7U
22	TP53	Cellular tumor antigen p53	Non-small cell lung cancer	yes	1C26
23	STK11	Serine/threonine-protein kinase	Non-small cell lung cancer	yes	4ZDR
24	KEAP1	Kelch-like ECH-associated protein 1	Non-small cell lung cancer	yes	1U6D
25	PIK3CA	phosphatidylinositol-4,5-bisphosphate 3-kinase, catalytic subunit alpha	Non-small cell lung cancer	yes	2RD0

References:

- <https://pmc.ncbi.nlm.nih.gov/articles/PMC12414981/>
<https://www.sciencedirect.com/science/article/pii/S0959804925010779>
<https://pmc.ncbi.nlm.nih.gov/articles/PMC5082594/>
<https://www.nature.com/articles/s41698-025-01144-9>
https://journals.lww.com/crst/fulltext/2021/01000/ret_gene_fusions_rearrangements_as biomarkers_for_58.aspx
https://journals.lww.com/crst/fulltext/2022/05010/a_narrative_review_of_erbb2_in_non_small_cell_lung.18.aspx
<https://pubmed.ncbi.nlm.nih.gov/36099421/>
<https://pmc.ncbi.nlm.nih.gov/articles/PMC12494102/>
<https://www.sciencedirect.com/science/article/pii/S155608641531220X>
https://ascopubs.org/doi/10.1200/JCO.2023.41.16_suppl.3038
<https://journals.sagepub.com/doi/full/10.1177/18758592251330479>
<https://www.sciencedirect.com/science/article/abs/pii/S0031302523003355>
[https://www.thelancet.com/journals/lanepo/article/PIIS2666-7762\(24\)00005-X/fulltext](https://www.thelancet.com/journals/lanepo/article/PIIS2666-7762(24)00005-X/fulltext)