

# Barone's High-Yield Targeted Therapy

## Precision Medicine

Targeted treatments based on genetics, biomarkers, or phenotype.

Disease	Biomarker	Treatment
<b>Cystic fibrosis</b>	G551D mutation	Ivacaftor
<b>Cystic fibrosis</b>	$\Delta$ F508 mutation	Lumacaftor + Ivacaftor
<b>CML</b>	BCR-ABL TK fusion protein	Imatinib
<b>AML M3 (APL)</b>	PML-RARA fusion gene	All-trans retinoic acid
<b>B-cell Lymphoma and Leukemia</b>	CD20(+)	Rituximab
<b>Myelodysplastic syndrome (MDS)</b>	5q-	Lenalidomide
<b>Breast cancer</b>	HER2-neu overexpression	Trastuzumab
<b>Breast cancer</b>	ER/PR (+)	Anti-estrogen therapy
<b>Lung cancer Adenocarcinoma</b>	EGFR overexpression	Erlotinib, Gefitinib
<b>Lung cancer Adenocarcinoma</b>	EML4-ALK TK fusion protein	Crizotinib
<b>Colon cancer Adenocarcinoma</b>	EGFR expression with wild-type KRAS*	Cetuximab
<b>Melanoma</b>	BRAF V600E mutation	Vemurafenib
<b>MEN 2</b>	Ret mutation	Prophylactic thyroidectomy

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\*Cetuximab will only work in KRAS wild-type metastatic colon cancer. If KRAS is mutated the drug wont work since KRAS is downstream of the EGFR.

Targeted therapy is a very hot topic and is being tested!!!!

More to come!

-Dr. B