

# Making sense of drug names in Haematology

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# Focus of this talk

Primarily on drugs introduced in last 20 years

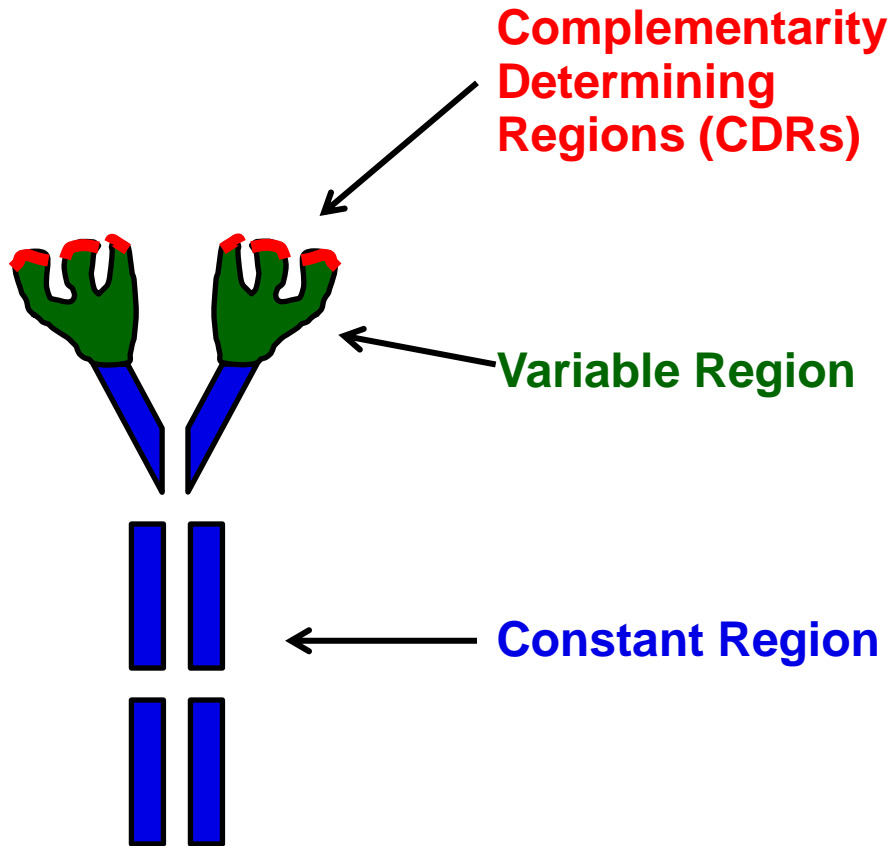
- Monoclonal antibodies
- New anticoagulants
- Targeted drugs for blood cancers

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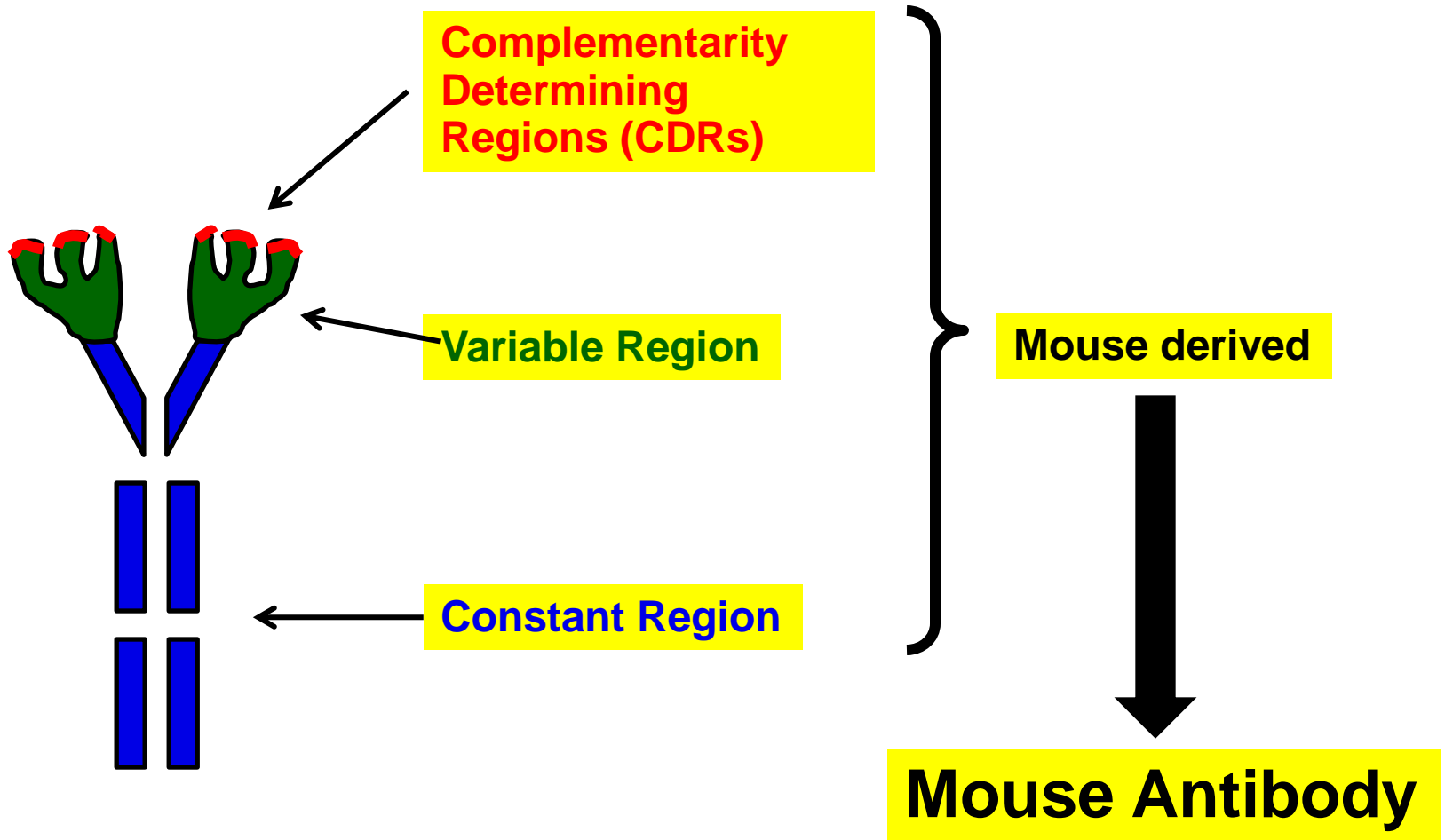
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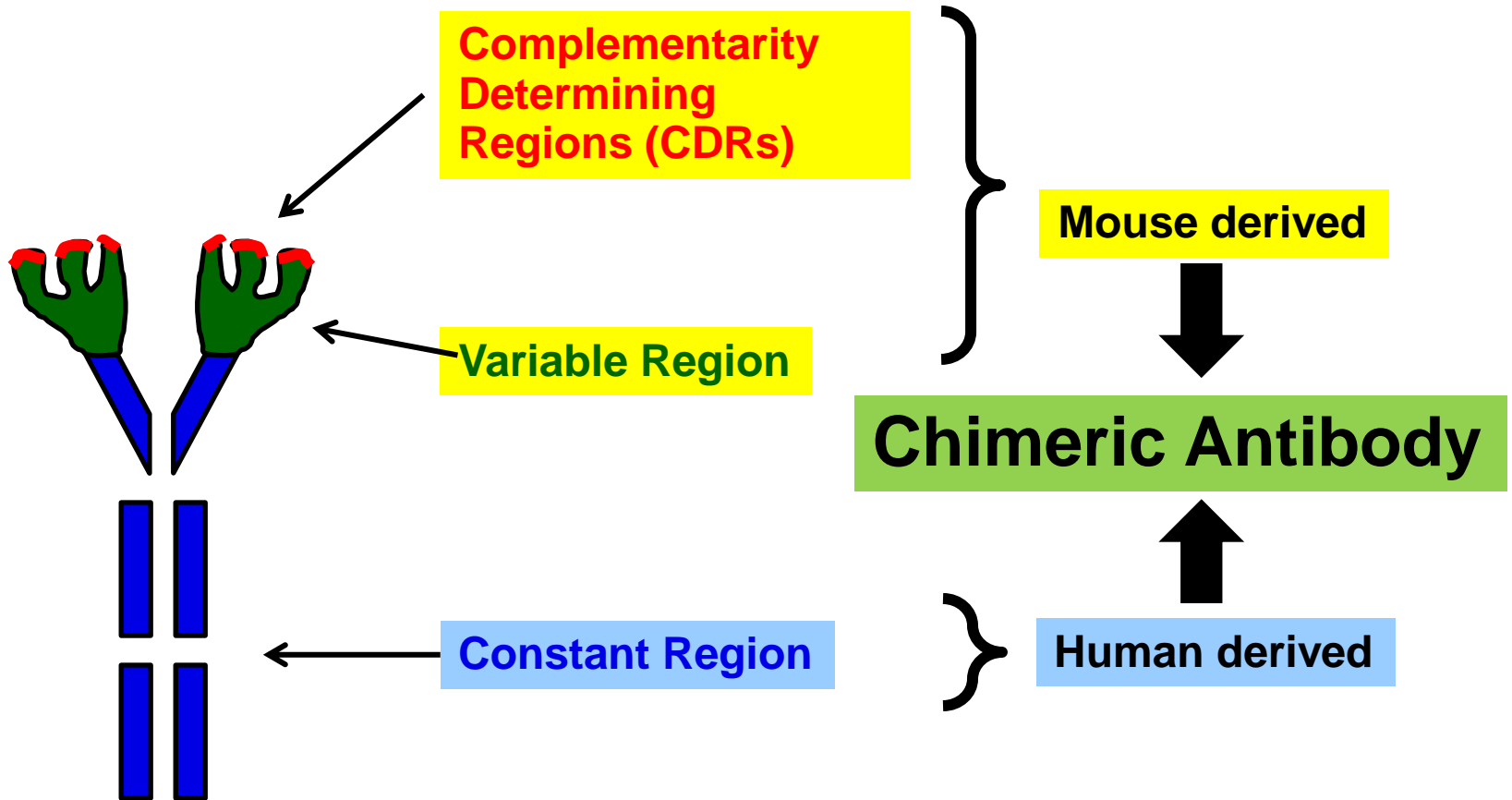
# Monoclonal Antibodies



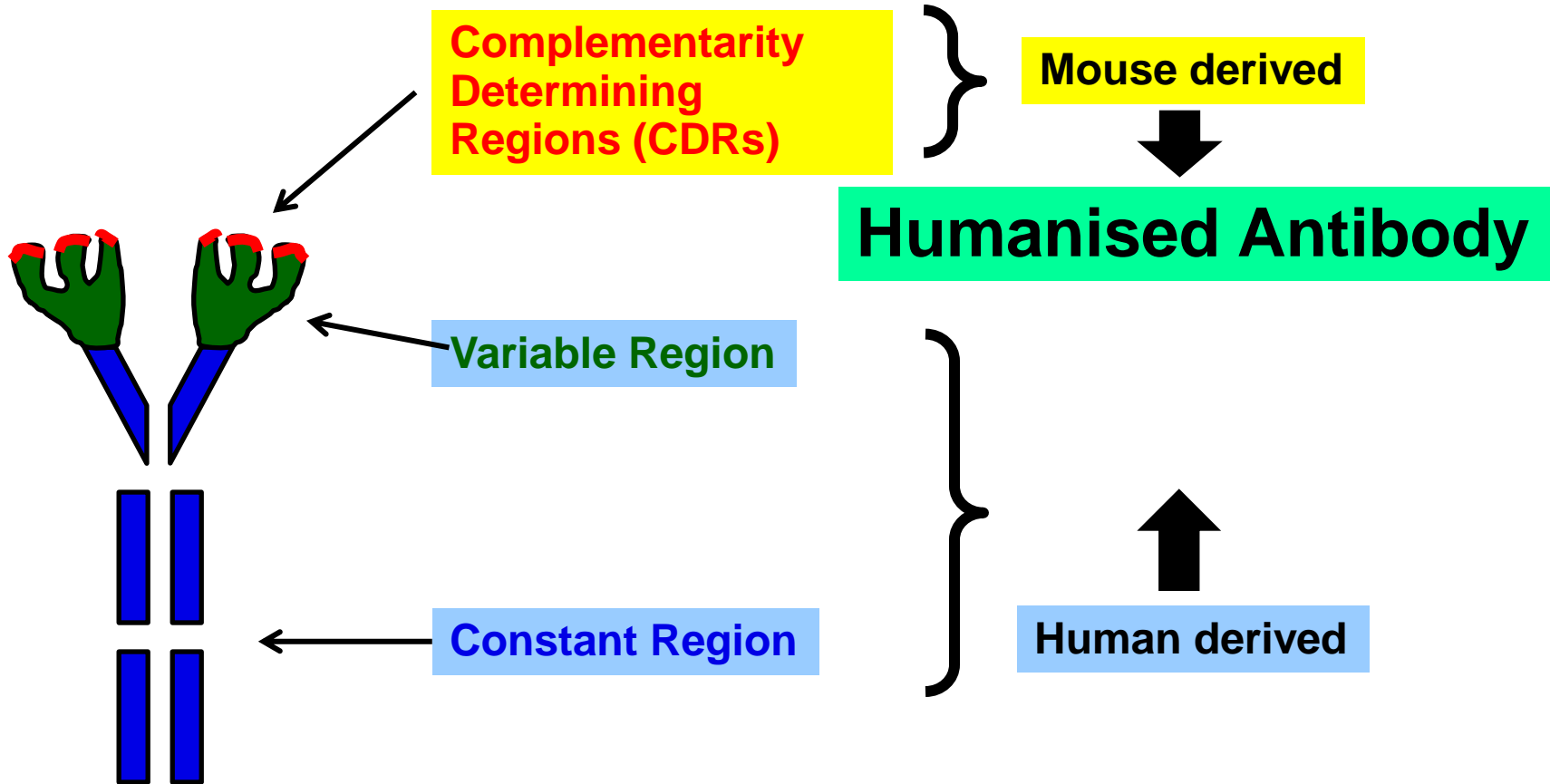
# Monoclonal Antibodies



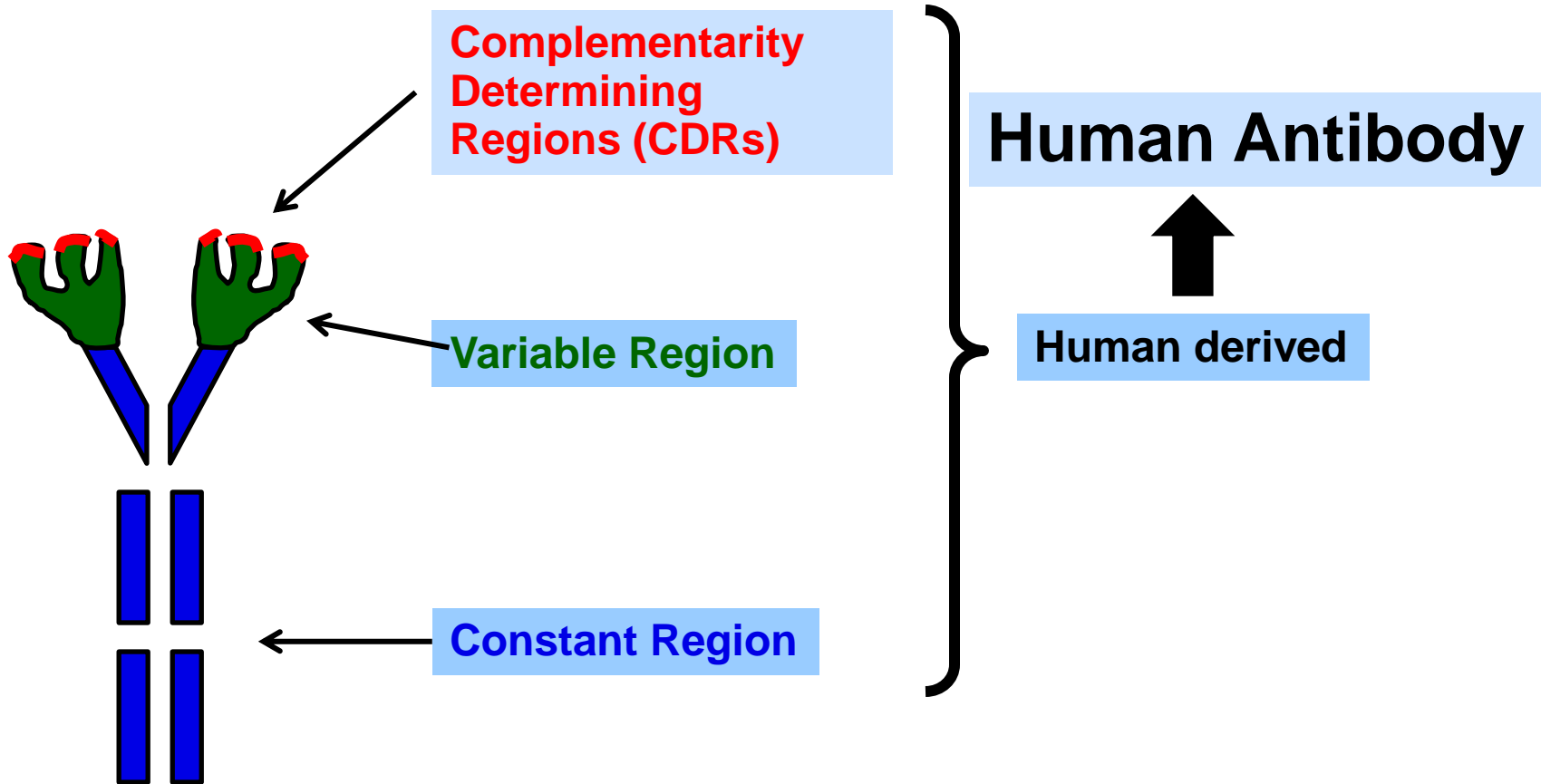
# Monoclonal Antibodies



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# Monoclonal Antibodies

Medscape®

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Prefix	Original application	Species source	Suffix		
Individual	-vi(r)-	viral	-o-	mouse	-mab
	-ba(c)-	bacterial	-a-	rat	
	-fun(g)-	fungus	-u-	human	
	-li(m)-	immune	-i-	primate	
	-neu(r)-	neural	-xi-	chimeric	
	-mu(l)-	musculoskeletal	-zu-	humanized	
	-tu(m)-	tumor			
-ci(r)-	circulatory				
Nata-	-li-	-zu-		-mab	
Alem-	-tu-	-zu-		-mab	
Dac-	-li-	-zu-		-mab	
Ri-	-tu-	-xi-		-mab	

Source: Expert Rev Neurother © 2008 Future Drugs Ltd

Mouse (-omab)



100% Mouse  
225

Chimeric (-ximab)



~33% Mouse  
Cetuximab  
Rituximab

Humanize (-zumab)



~10% Mouse  
Matuzumab  
Nimotuzumab  
Alemtuzumab

Human (-umab)



100% Human  
Panitumumab  
Zalutumumab  
Adalimumab

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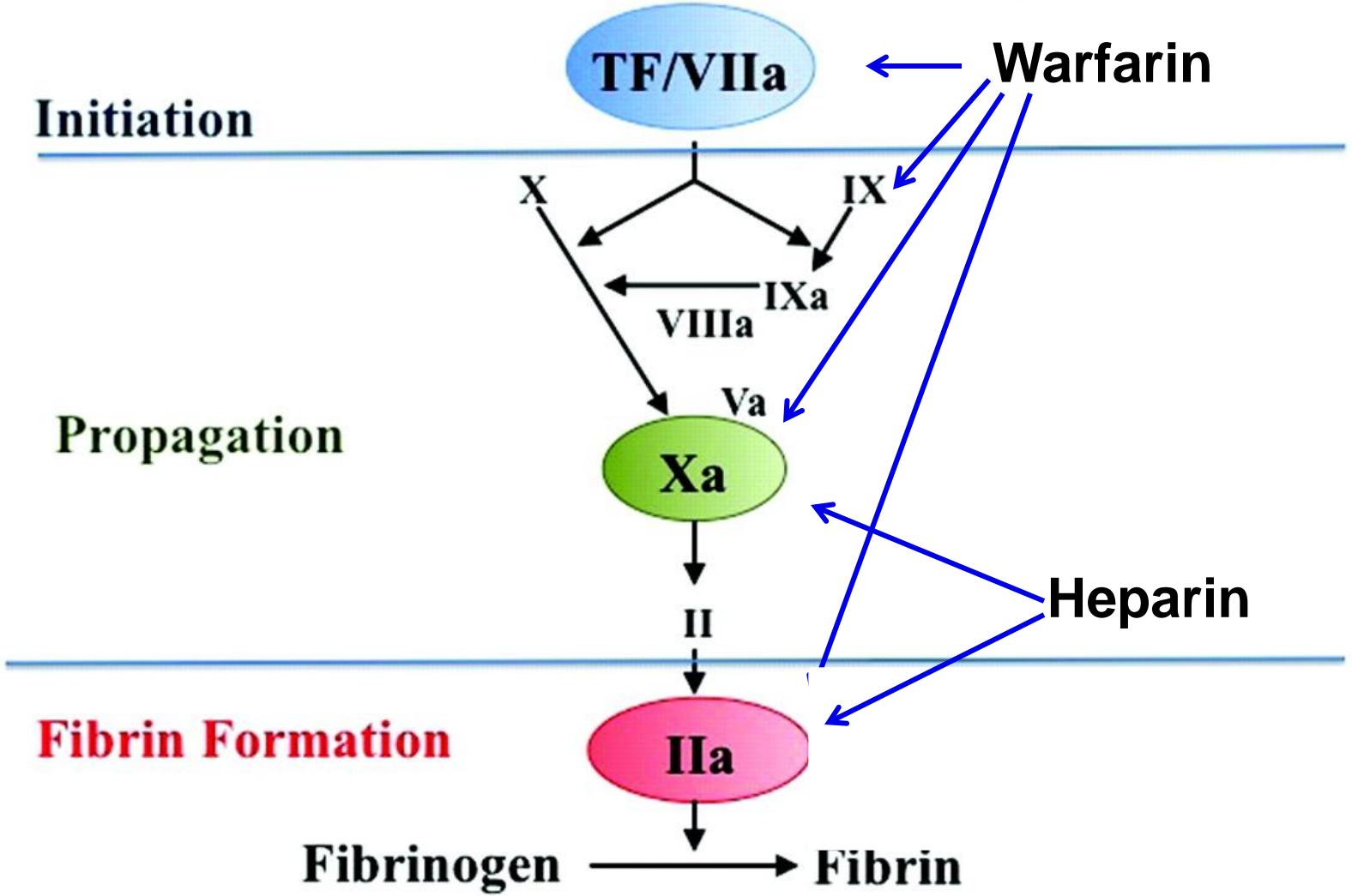
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**Steps In Coagulation**

**Coagulation Pathway**

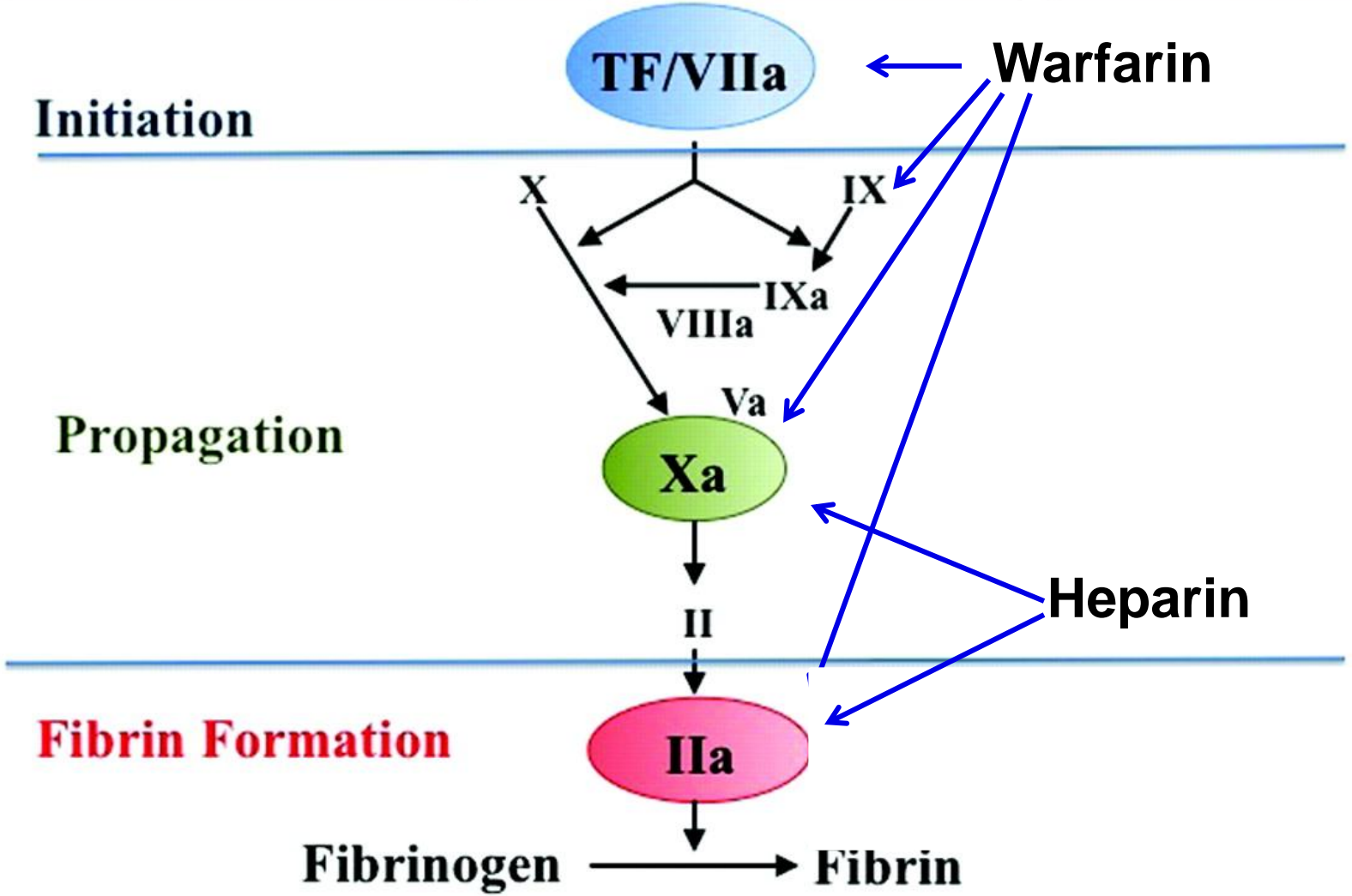
**Inhibitory Drugs**



**Steps In Coagulation**

**Coagulation Pathway**

**Inhibitory Drugs**

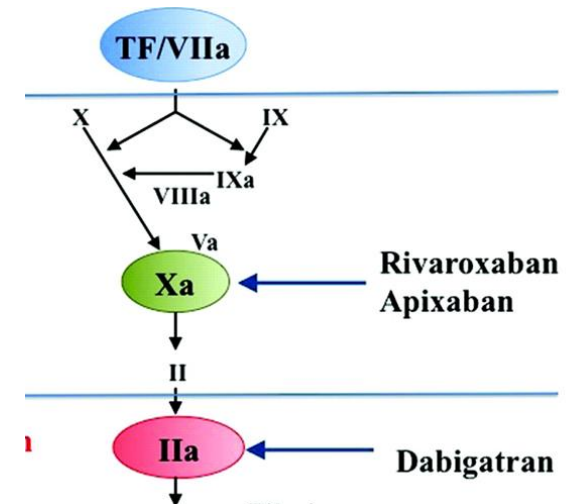


# New anticoagulants

- **Direct Xa inhibitors** } Rivaroxaban  
Apixaban

- **Direct thrombin inhibitors**

- **Hirudin derivatives**

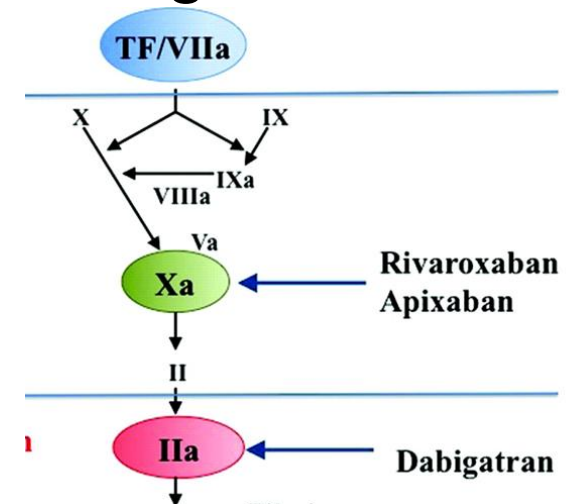


# New anticoagulants

- **Direct Xa inhibitors**

- **Direct thrombin inhibitors** } Argatroban  
Dabigatran

- **Hirudin derivatives**



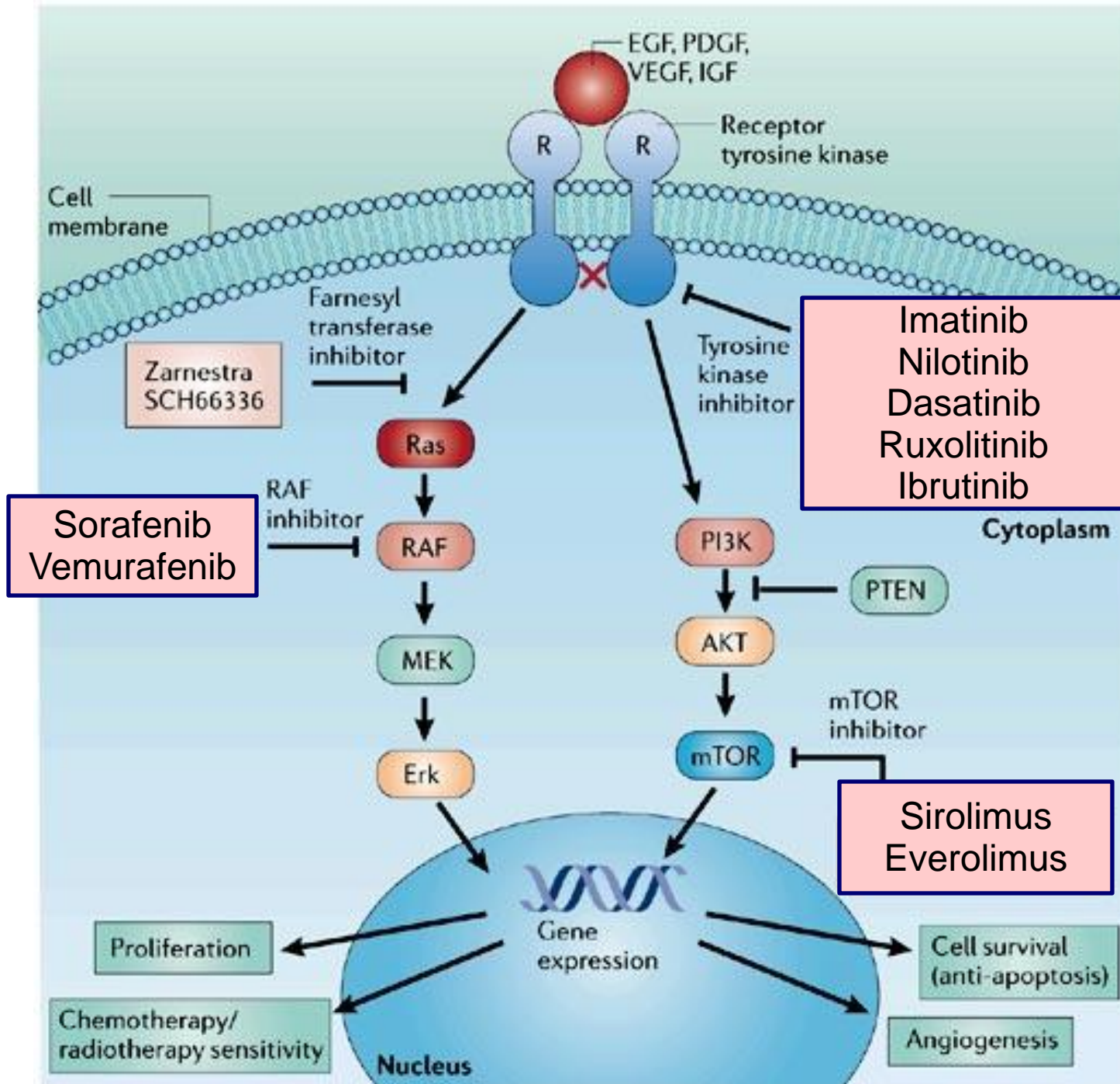




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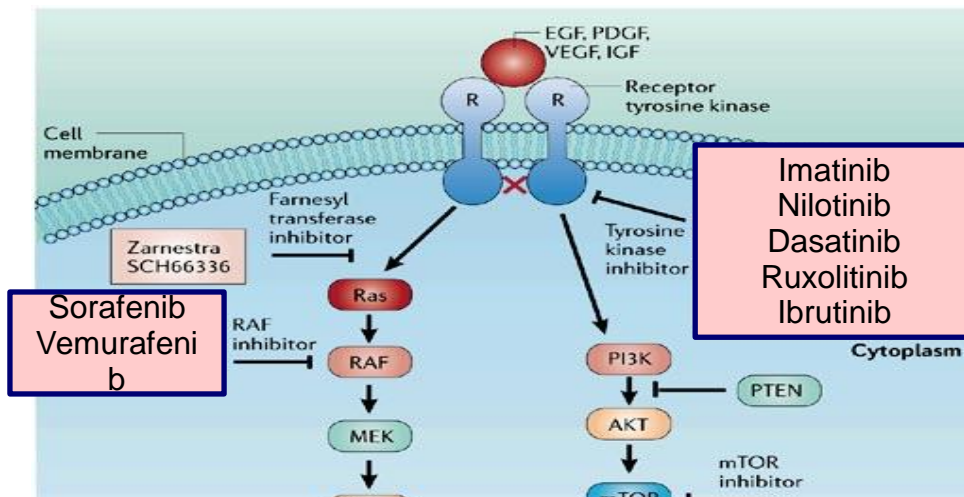
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# Tyrosine Kinase Inhibitors

## The “Tinibs”

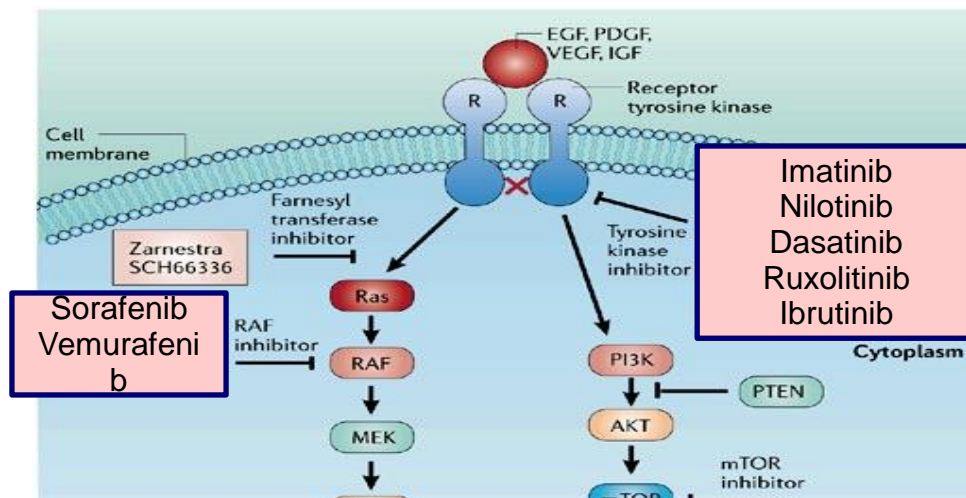
- Imatinib
  - Nilotinib
  - Dasatinib
- } BCR ABL → CML
- Ruxolitinib      Jak 2 → Myeloproliferative Neoplasms
  - Ibrutinib        BTK → Lymphoid Neoplasms



# Raf Inhibitors

## The “Rafenibs”

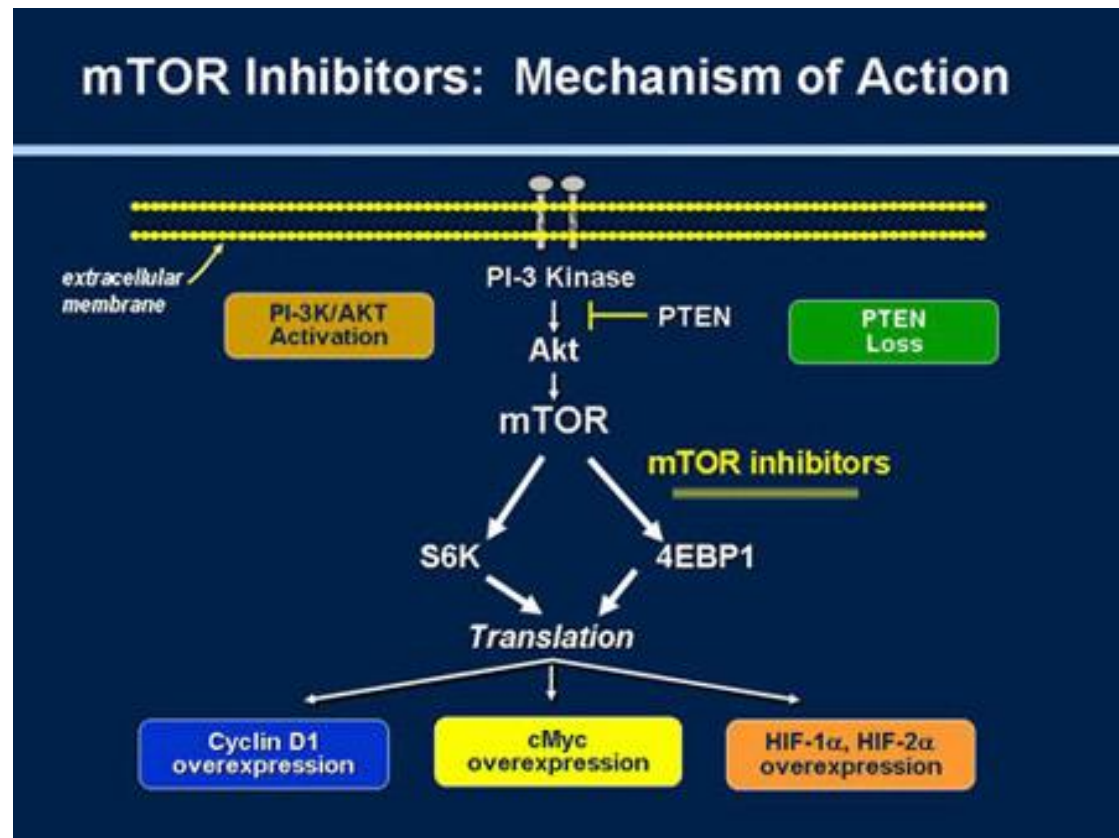
- **Sorafenib**: C-Raf, B-Raf and some tyrosine kinases (VEGFR and PDGFR) → Kidney, liver, thyroid and AML
- **Vemurafenib**: B-Raf → Melanoma, Hairy Cell Leukemia



# Macrolide Immunosupresants

The “Rolimus” series: mTOR inhibitors

- TACROLIMUS
- SIROLIMUS
- EVEROLIMUS
- PIMECROLIMUS
- TEMSIROLIMUS
- RIDAFOROLIMUS
- ZOTAROLIMUS
- BIOLIMUS



# Immunomodulatory Drugs

The “Lidomide” series: iMids

- Thalidomide
- Lenalidomide
- Pomalidomide

Anti-angiogenic and Ant-cytokine

Inhibits Cereblon

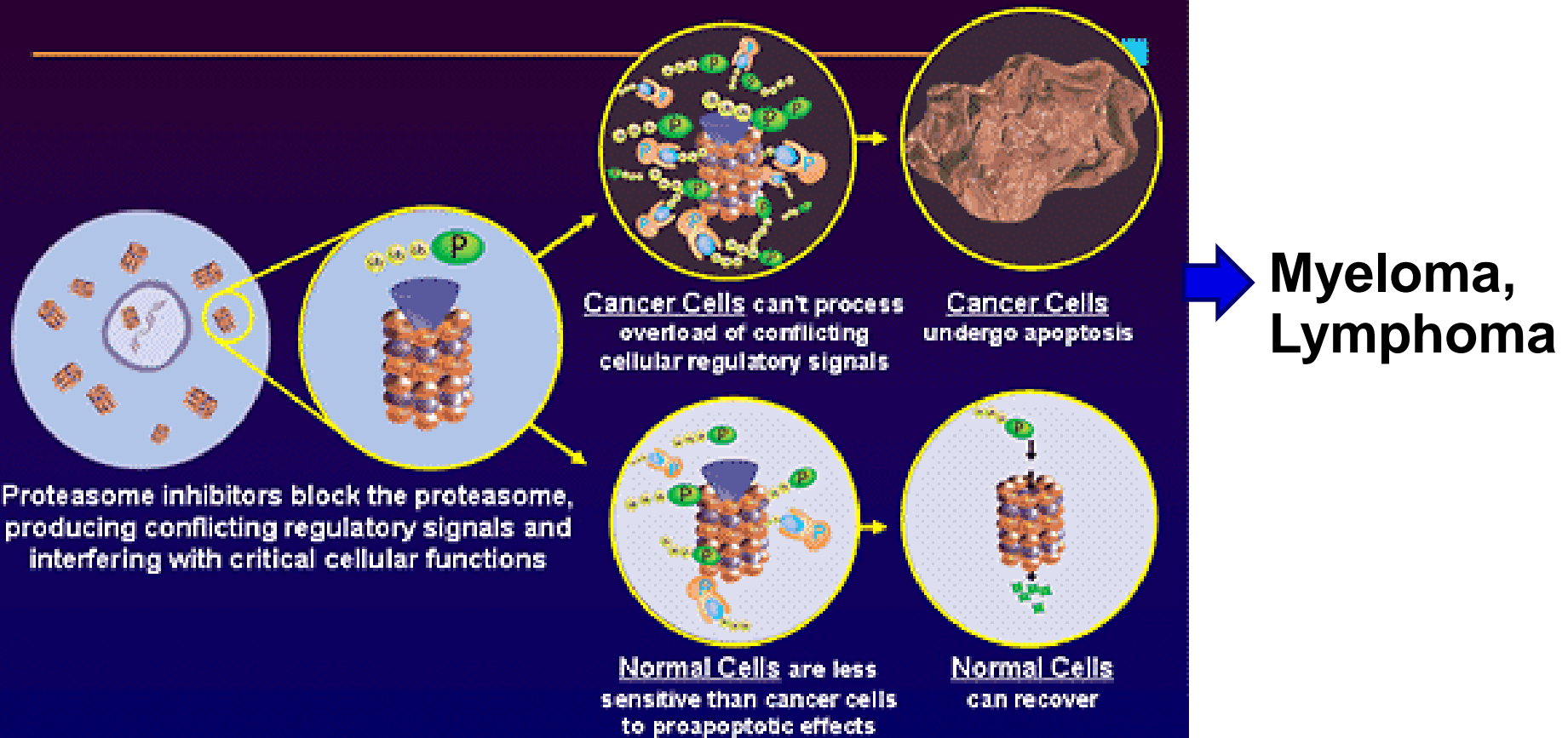
Used in patients with multiple myeloma,  
myelodysplastic syndrome

# Proteasome Inhibitors

1) Bortezomib

2) Carfilzomib

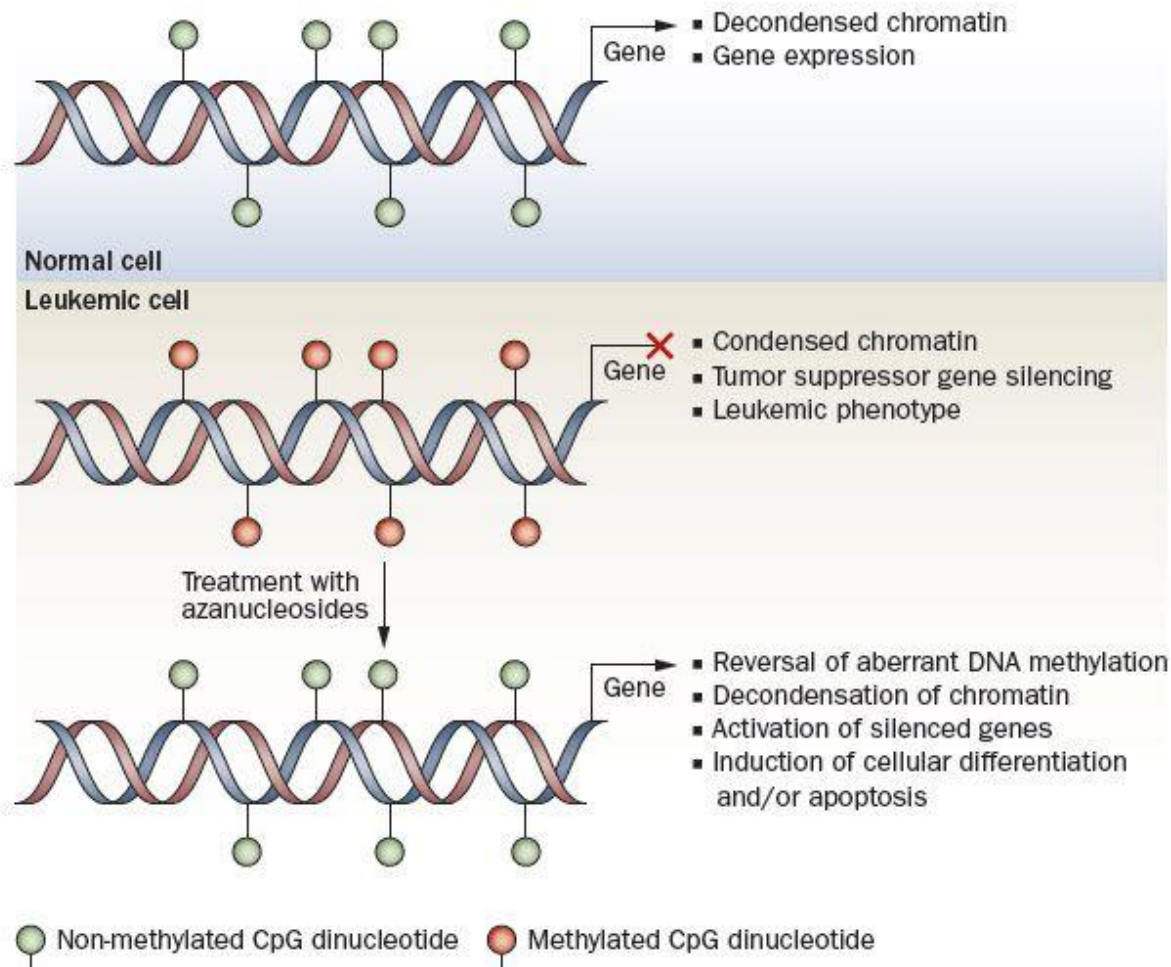
## How Proteasome Inhibition Works



# Hypomethylating Agents

## 1) Azacytidine

## 2) Decitabine



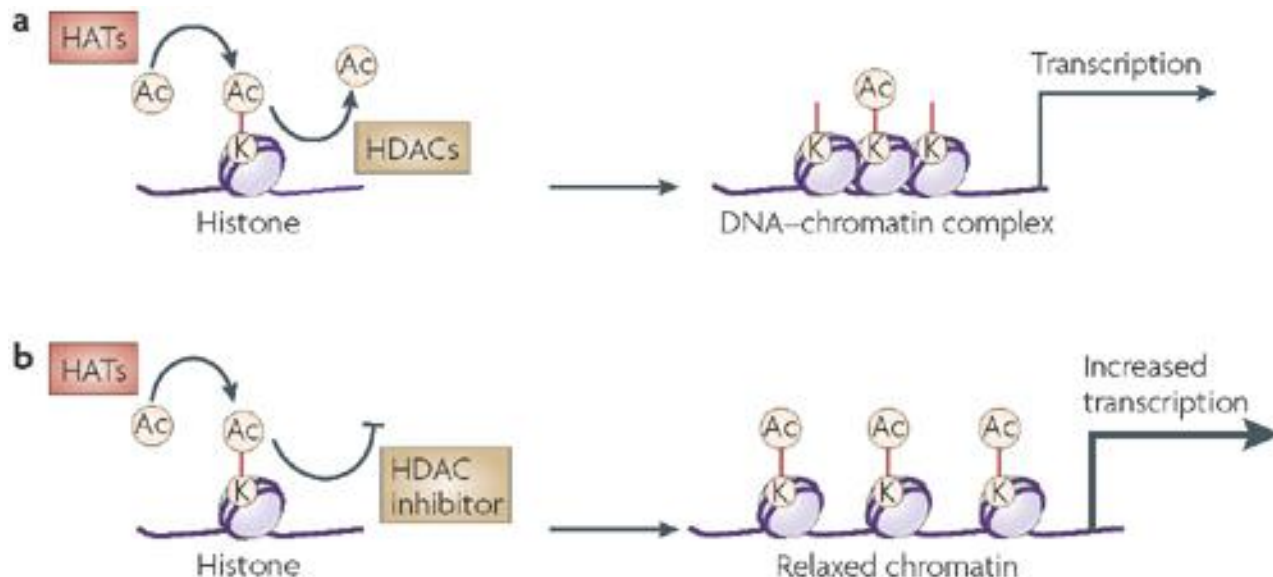


# Inhibitors of Histone Deacetylase

The “Inostats”: useful in MDS, AML, other CA

- Vorinostat → CTCL, ?AML
- Panobinostat → MDS, AML

Exception: Romidepsin → CTCL



# New platelet agents

- Eltrombopag → stimulates production of platelets
- Anagrelide → reduces platelet production

## Generic naming formula:

Name = prefix + substem(s) + stem

variable

-mab	<u>m</u> onoclonal <u>a</u> ntib <u>o</u> dy
-ib	small molecule with <u>i</u> nhib <u>i</u> tory properties

### Monoclonal antibodies

	<i>Target</i>		<i>Source</i>
-ci(r)-	circulatory system	-ximab	chimeric human-mouse
-li(m)-	immune system	-zumab	humanized mouse
-t(u)-	tumor	-mumab	fully human

### Small molecules

-tinib	tyrosine kinase inhibitor
-zomib	proteasome inhibitor
-ciclib	cyclin-dependent kinase inhibitor
-parib	poly ADP-ribose polymerase inhibitor