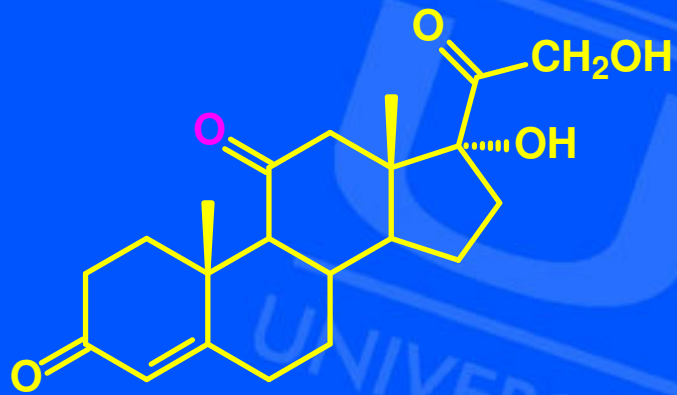

OBTENÇÃO DE FÁRMACOS ATRAVÉS DE BIOTRANSFORMAÇÕES DE PRODUTOS NATURAIS

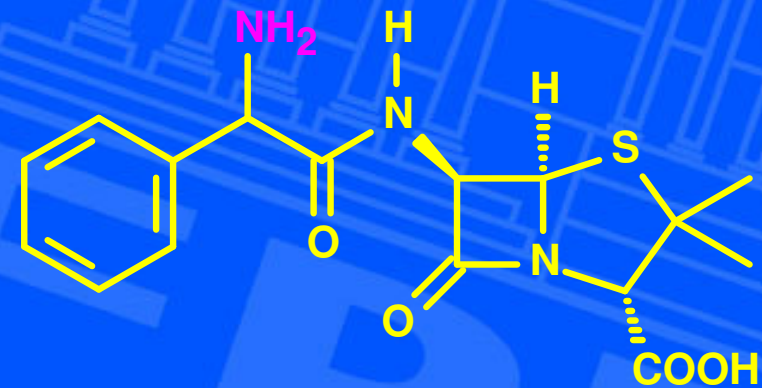
Brás H. de Oliveira
bho@ufpr.br



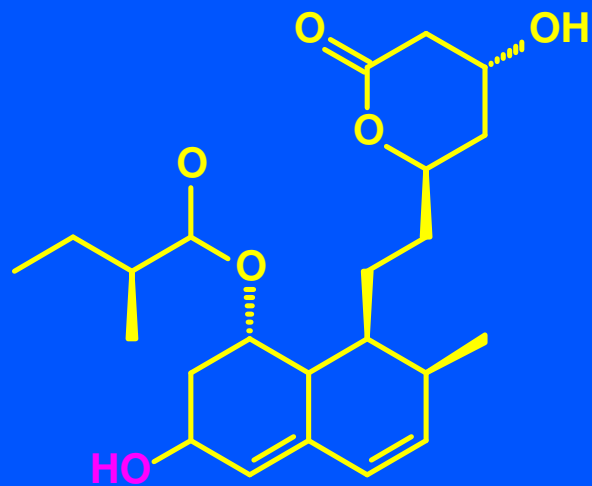
Introdução



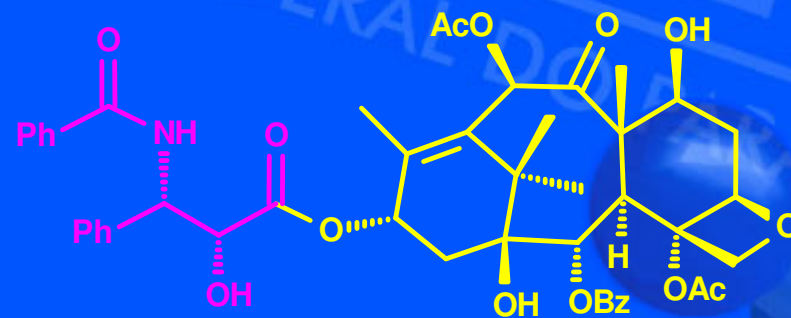
cortisona



ampicilina

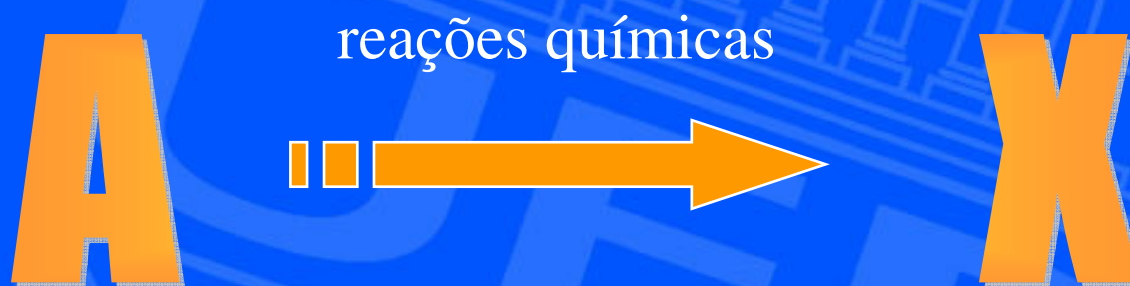


pravastatina



taxol

Introdução



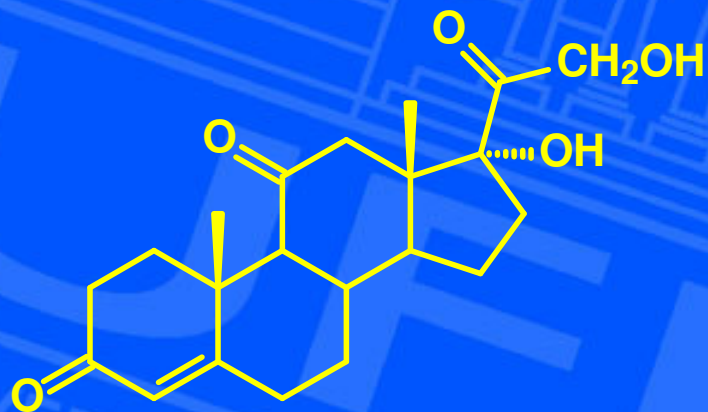
- Problemas:
 - Seletividade
 - Condições experimentais
 - Rejeitos tóxicos

Introdução

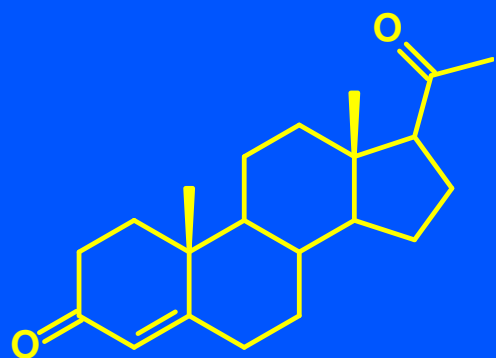


- Conceito
- Vantagens
 - Seletividade; condições; rejeitos
- Aplicação industrial
 - Substituição/novos processos

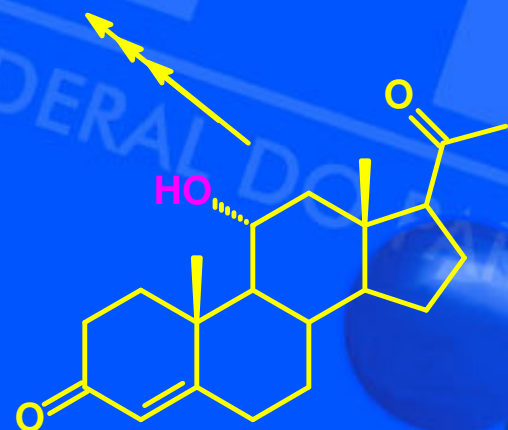
Esteróides



cortisona



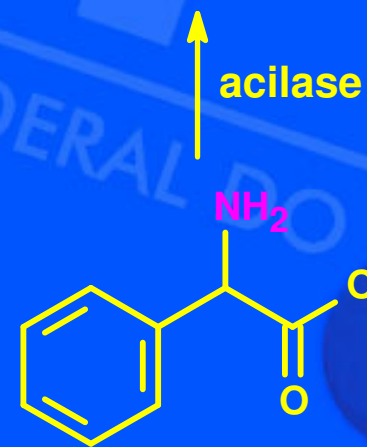
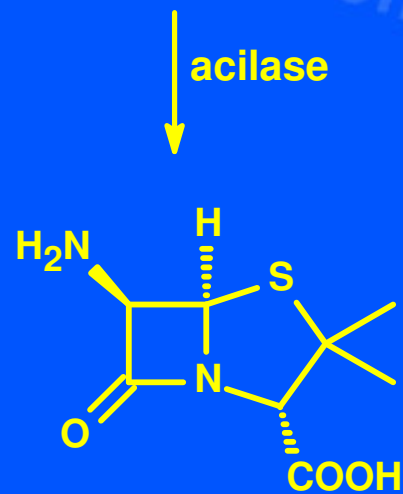
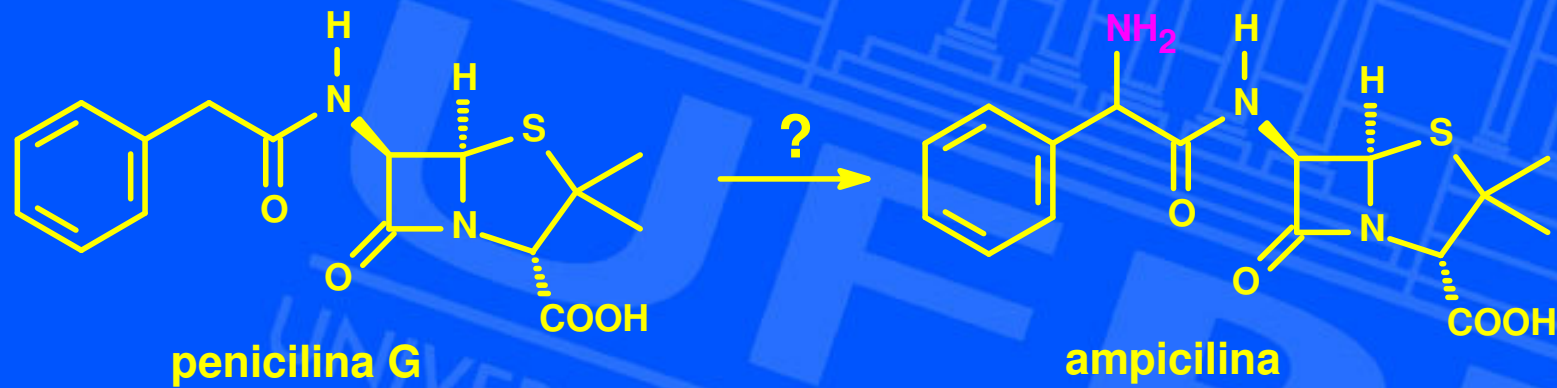
progesterona



11a-hidroxiprogesterona

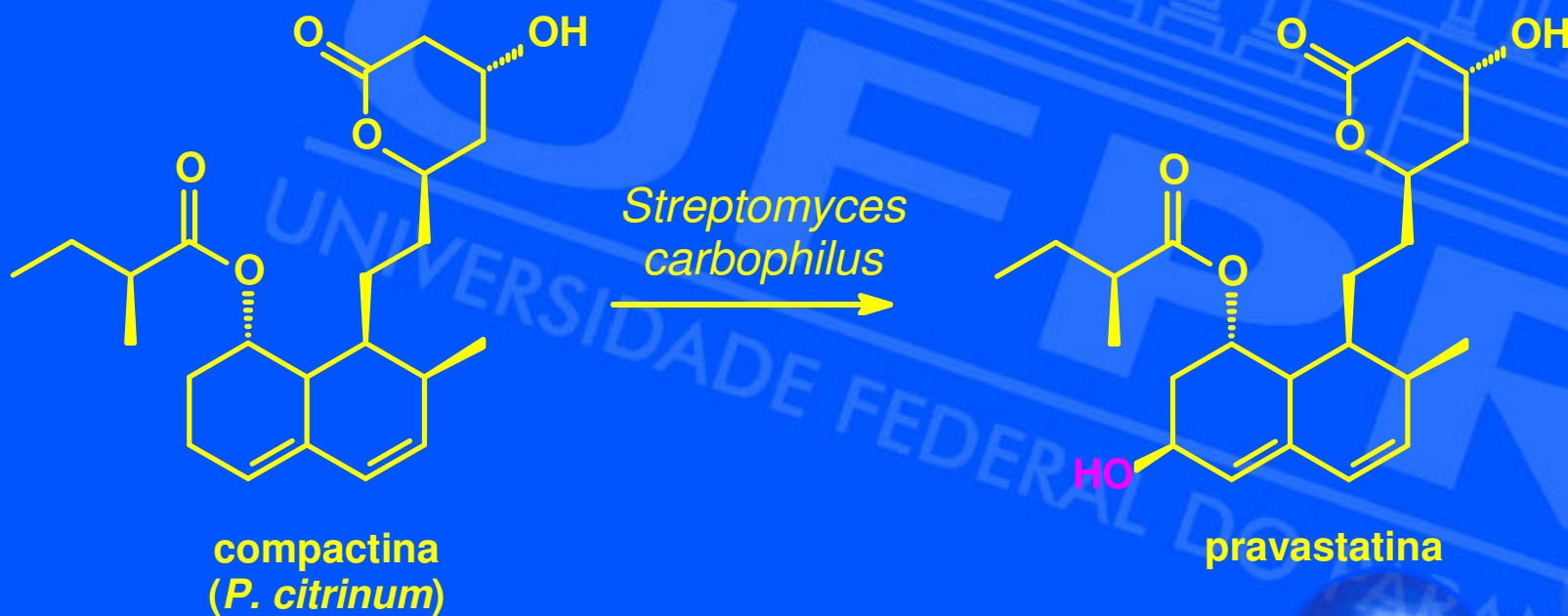
US2,602,769 (1952)

Penicilinas



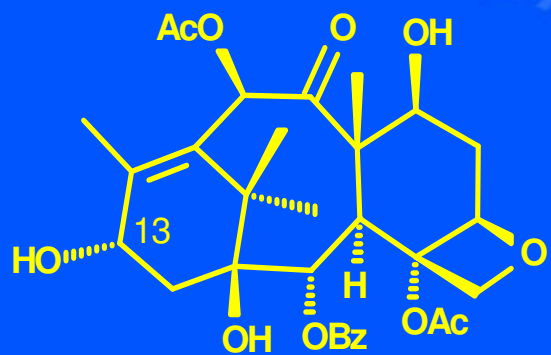
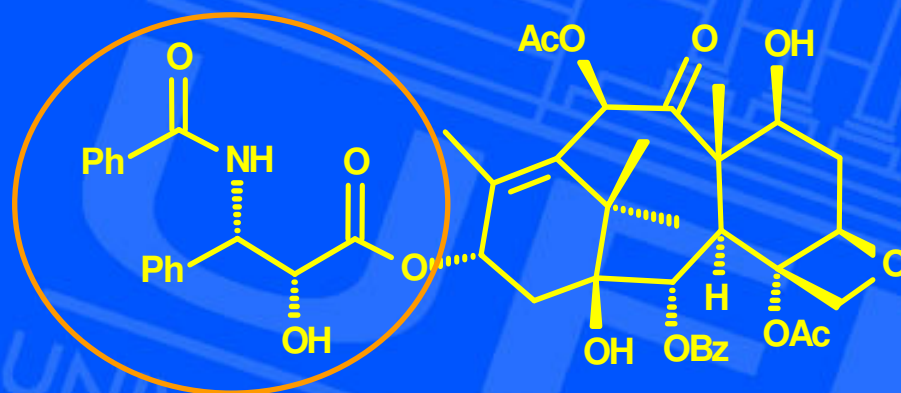
WO9623897-A (1996)

Estatinas

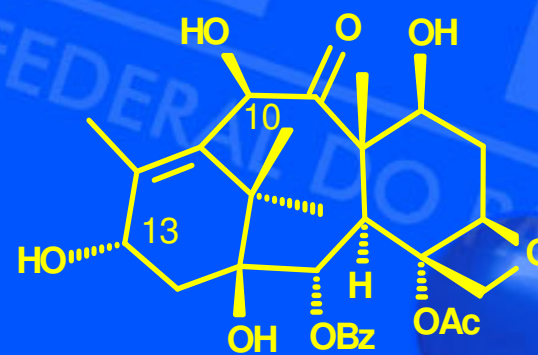


US6,750,366 (2004)

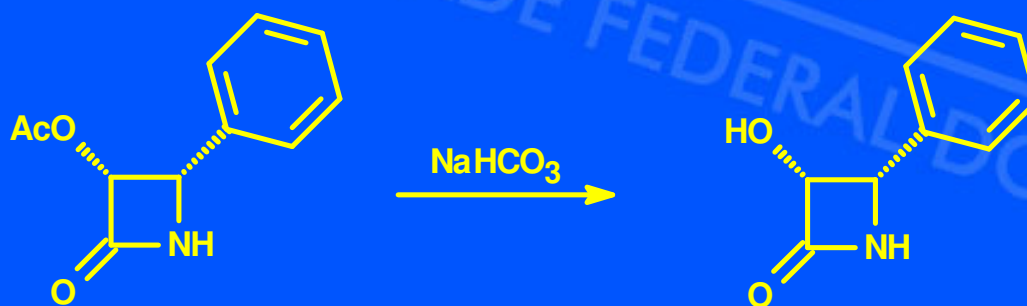
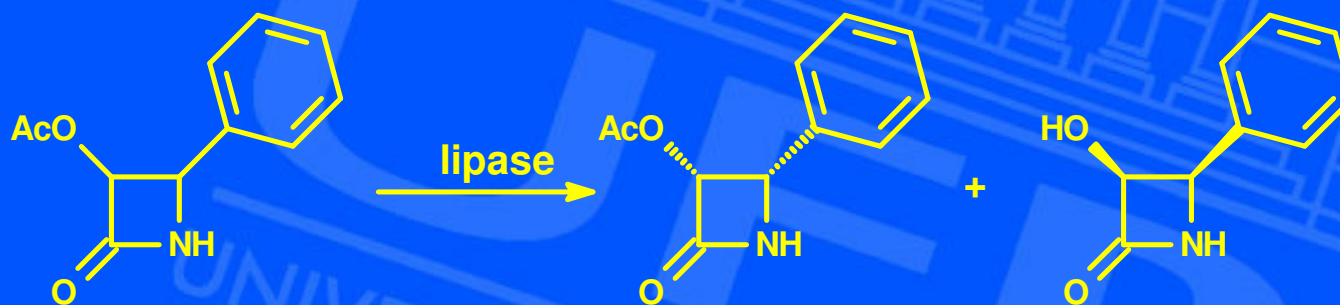
Paclitaxel (Taxol)



baccatina



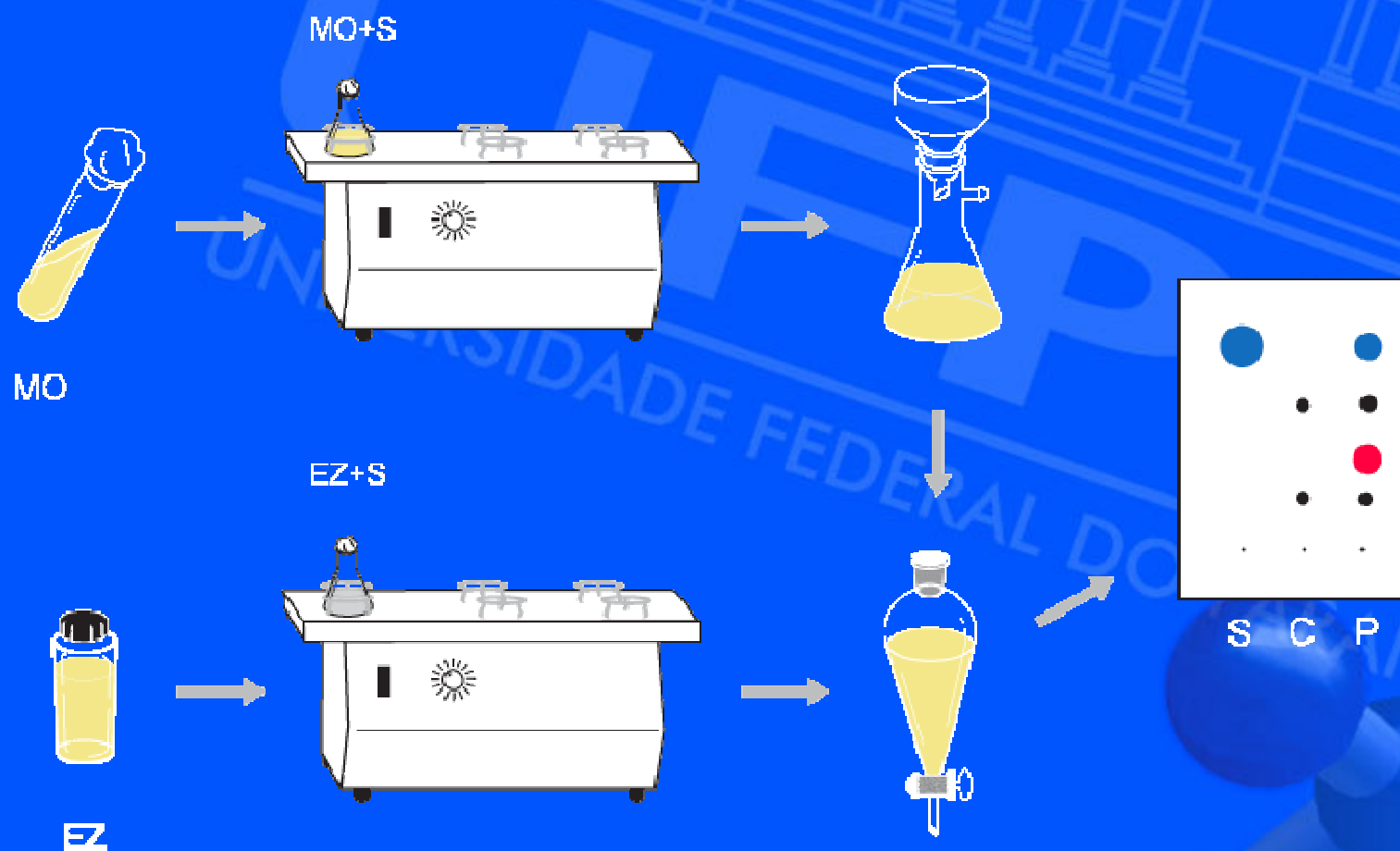
Paclitaxel (Taxol)



US2003069415-A1 (2003)

Metodologia

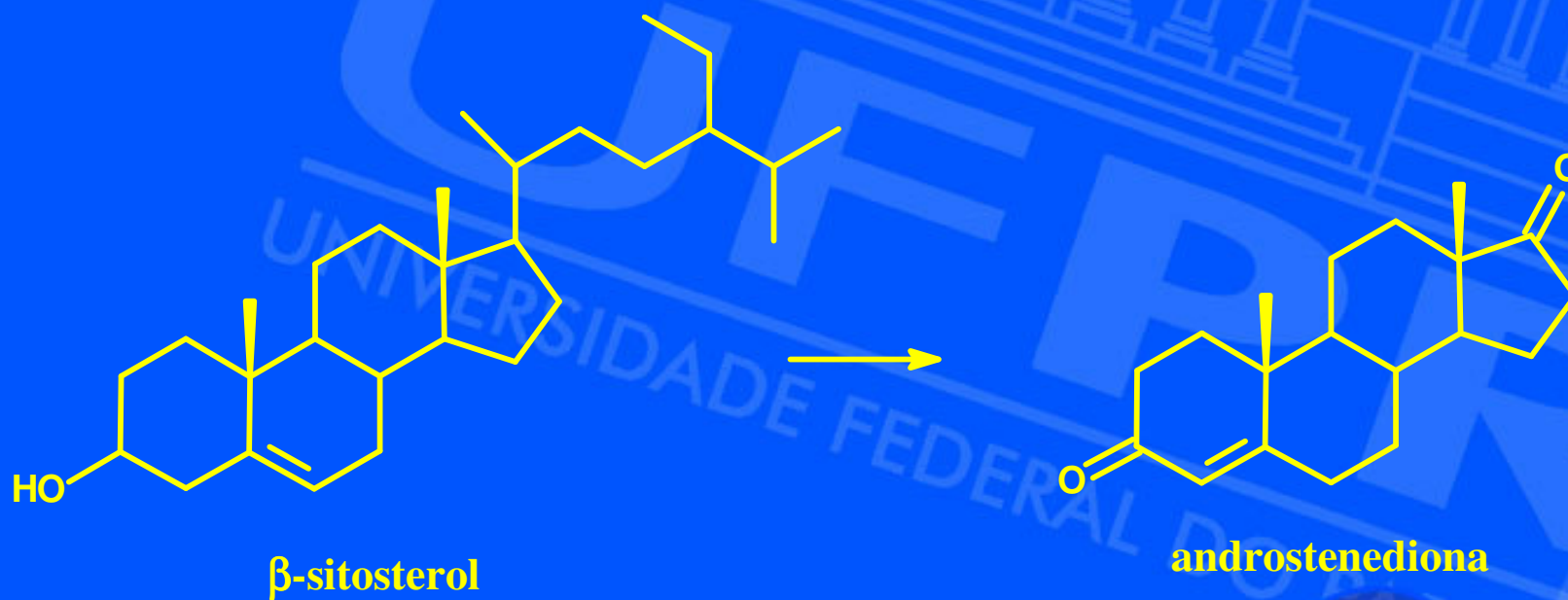
- Triagem



Metodologia

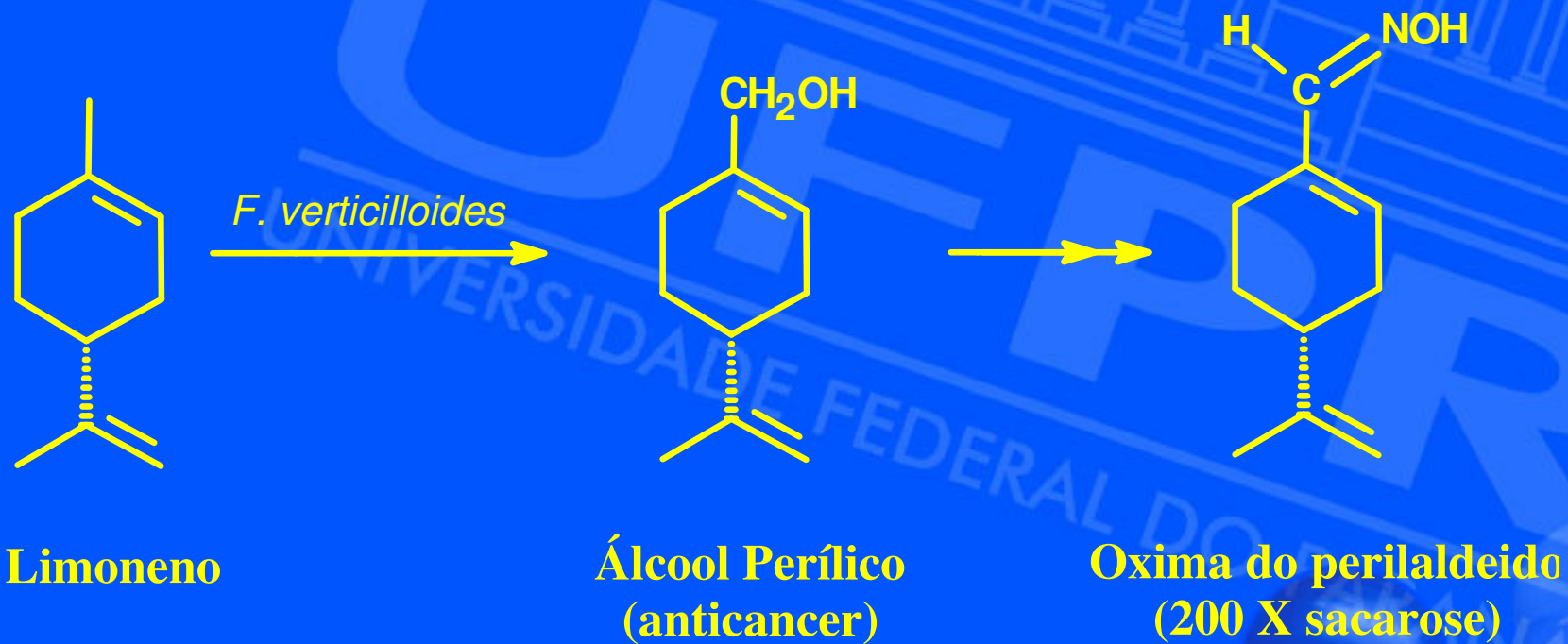
- Seleção do microorganismo/enzima
- Escala preparativa
- Isolamento/identificação dos metabólitos
- Escalonamento/otimização

Resultados



Química Nova 19, 233-6 (1996)

Resultados

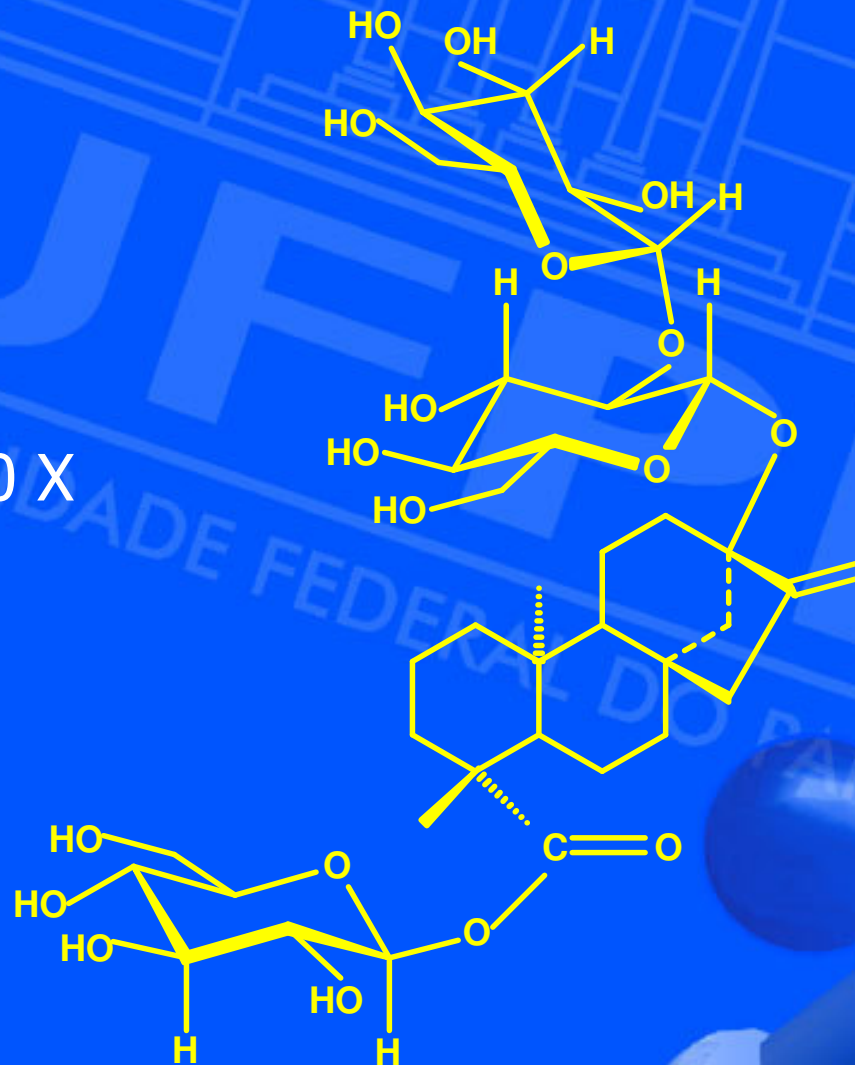


Arch Biol Technol 43, 11-14 (2000)

Resultados

Esteviosídeo

- *Stevia rebaudiana*
- Adoçante (300-400 X sacarose)
- Amargor residual

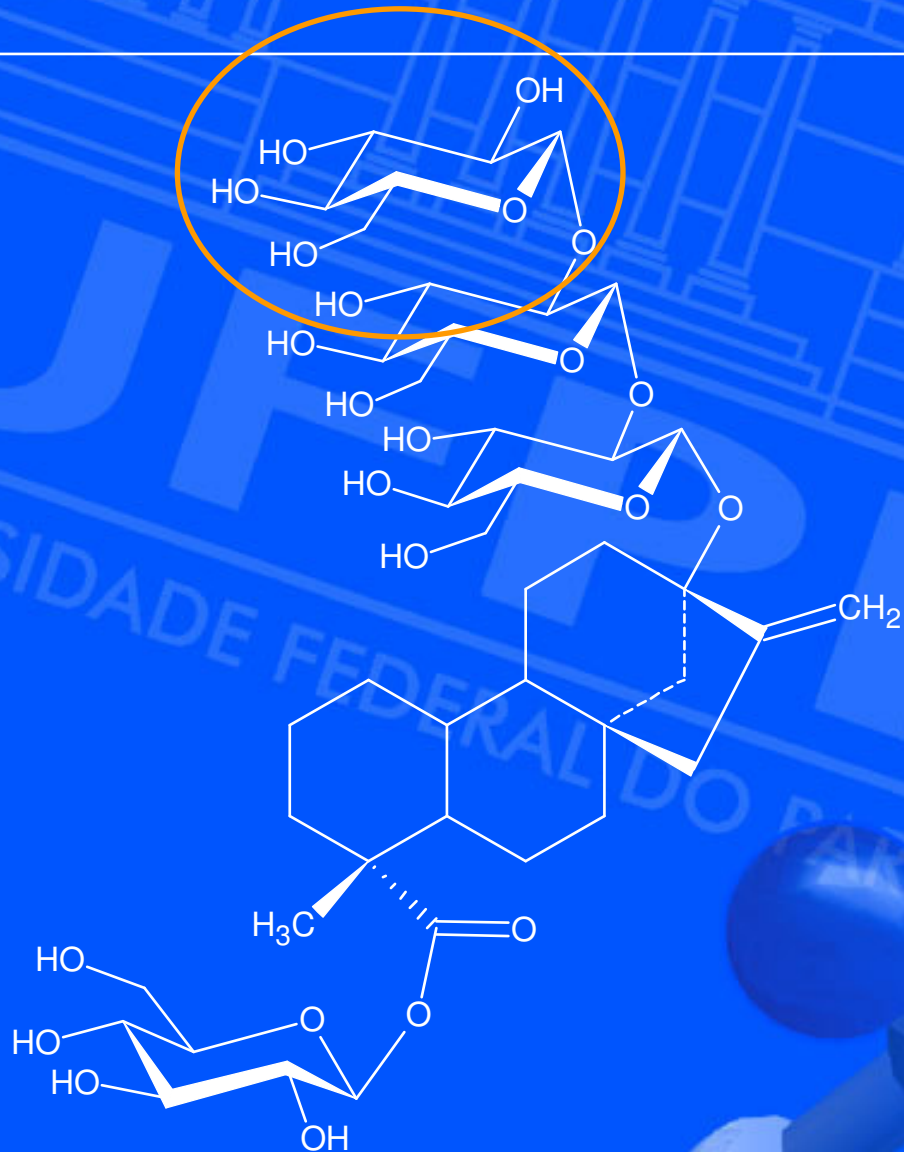


Resultados

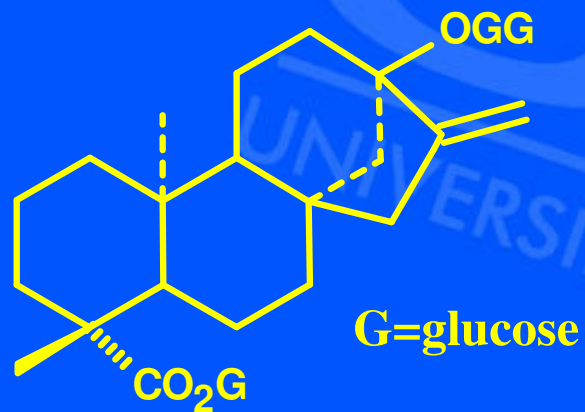
Glicosídeos do esteviol	Poder adoçante comparado à sacarose	Qualidade adoçante
Esteviosídeo	143	0
Rebaudiosídeo A	242	+2
Rebaudiosídeo C	Nd	-1
Rebaudiosídeo D	221	+3
Rebaudiosídeo E	174	+1
Esteviolbiosídeo	<50	-3
Esteviolmonosídeo	<50	-3

Resultados

- Rebaudiosídeo A



Resultados



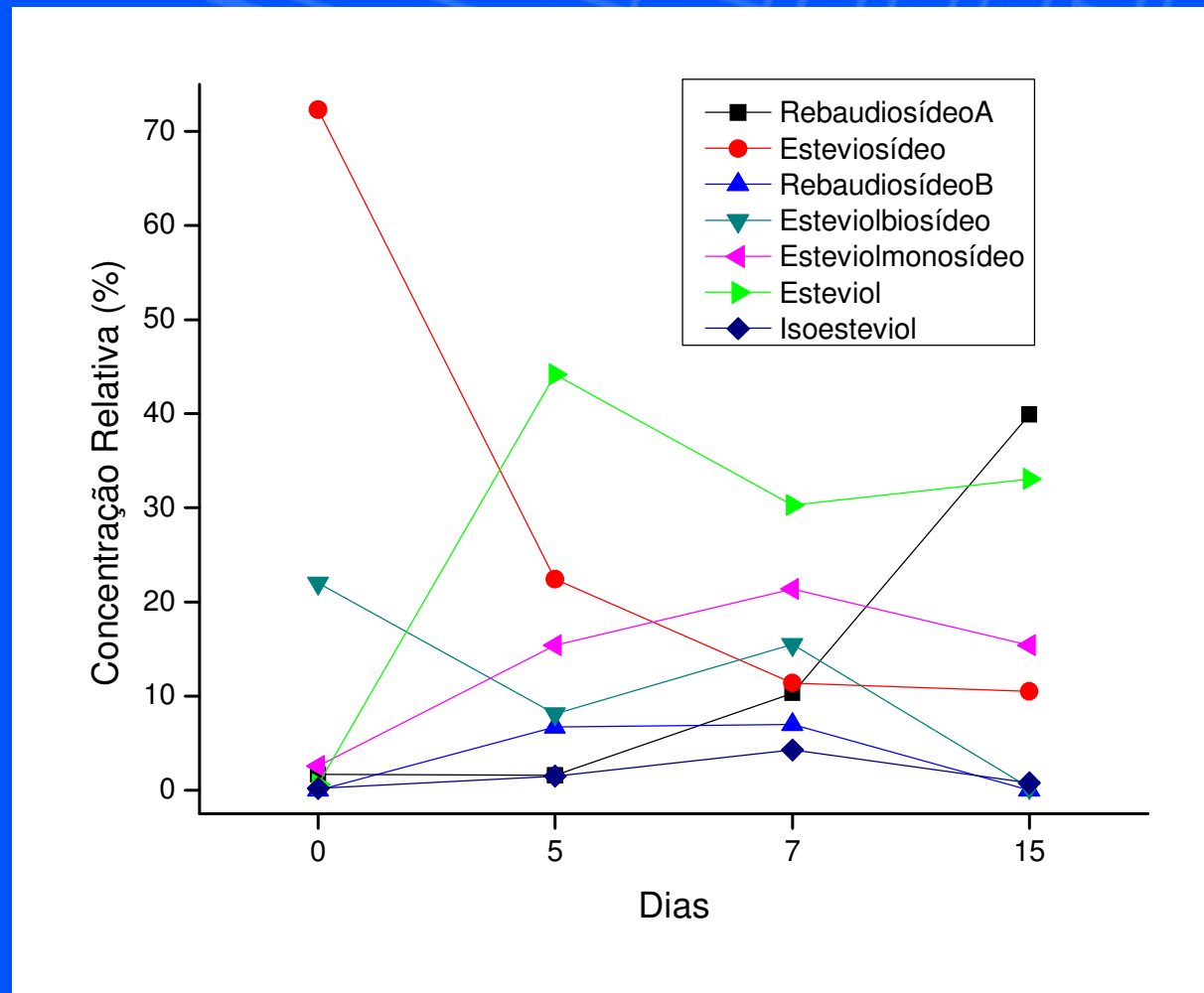
esteviosídeo

Gibberella fujikuroi

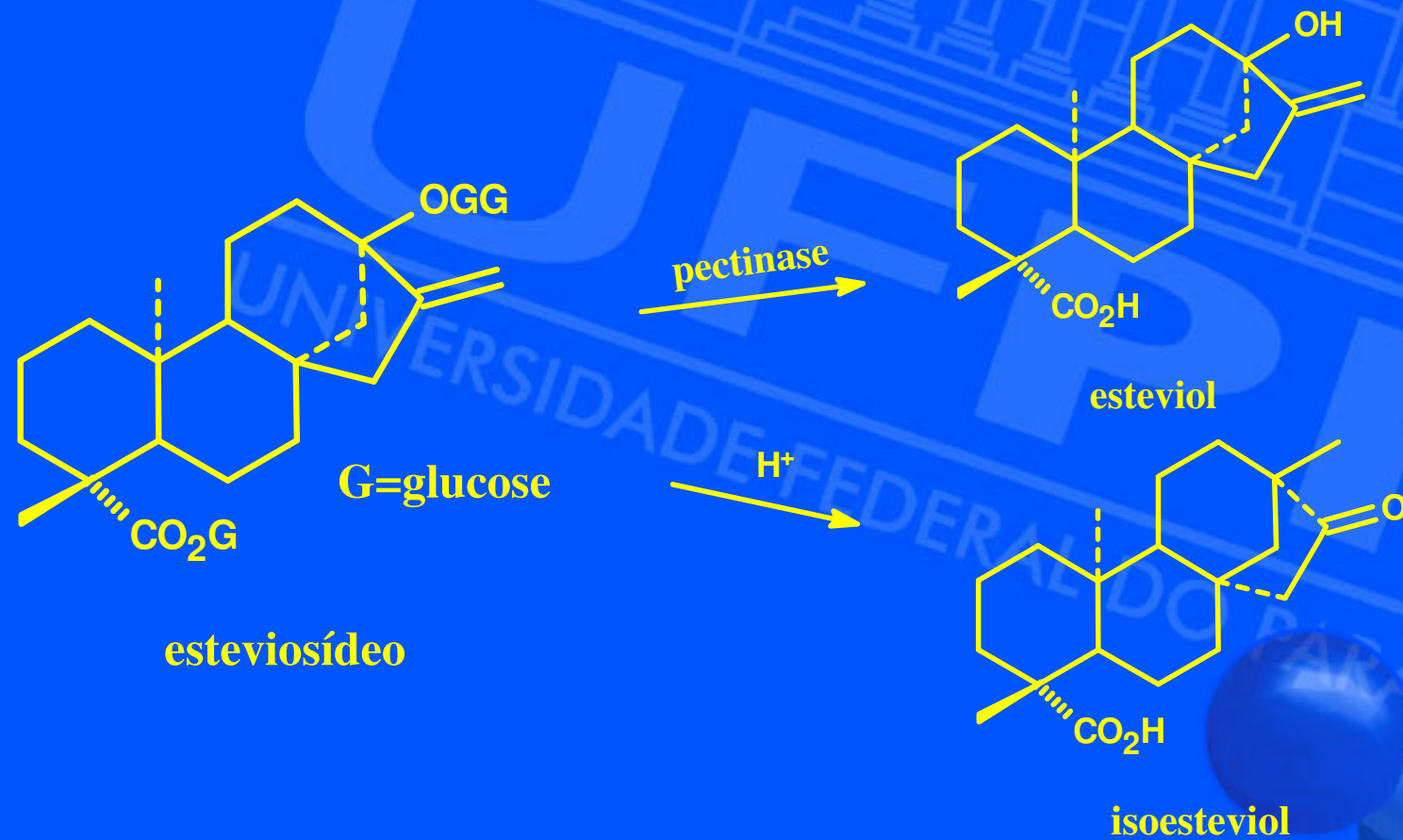


adição de
glicose?

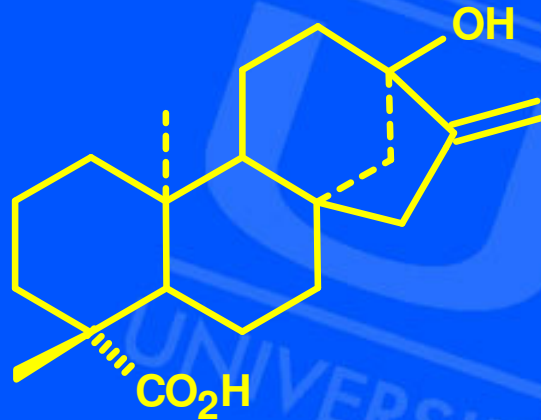
Resultados



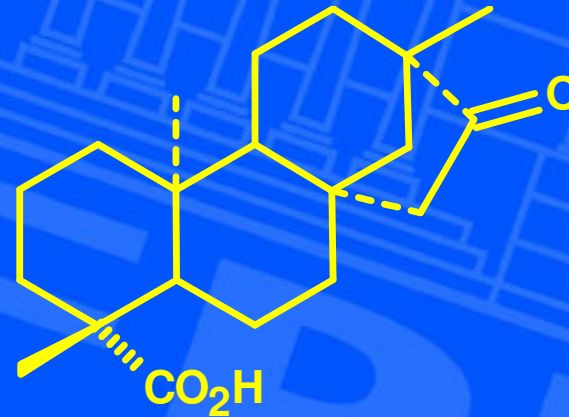
Resultados



Resultados



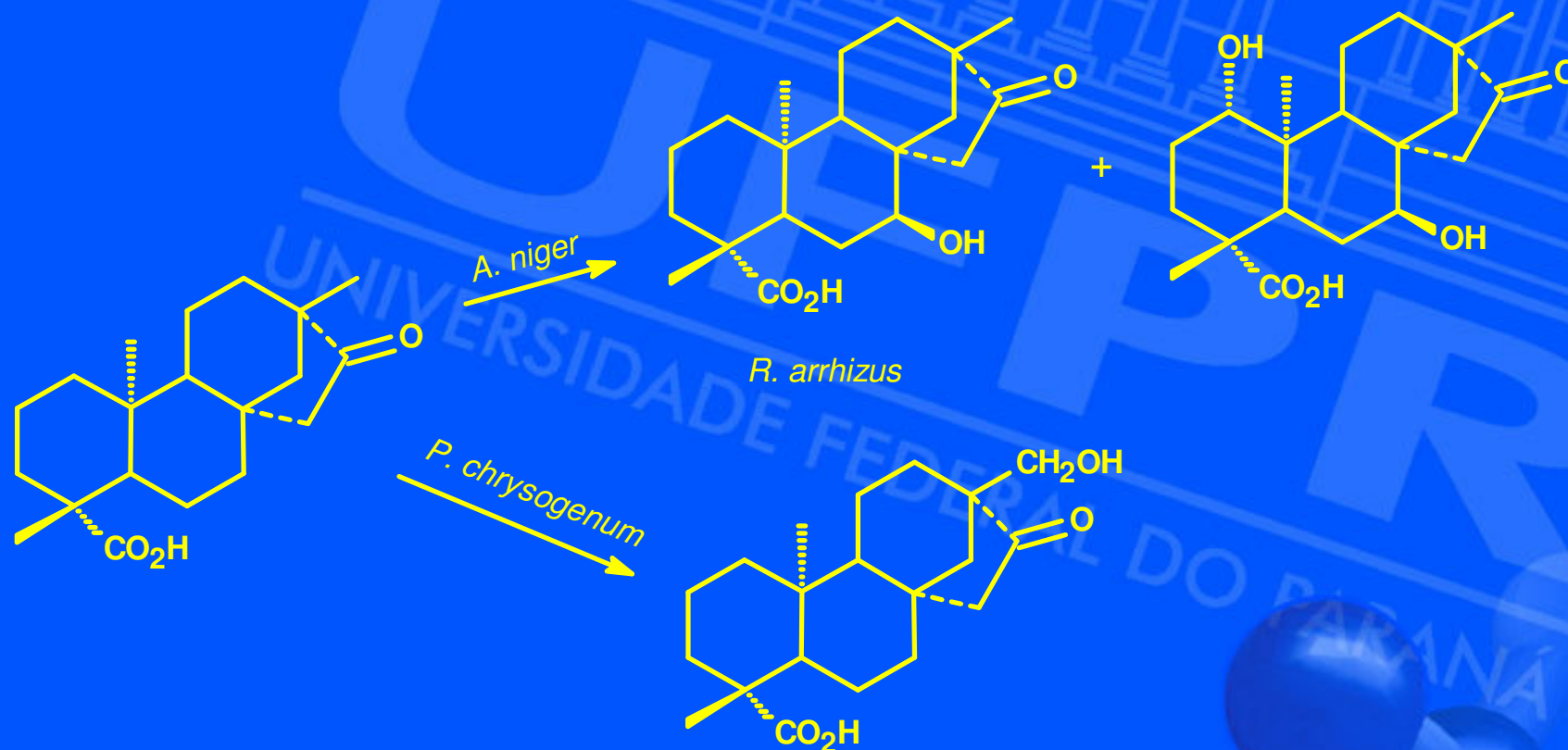
esteviol



isoesteviol

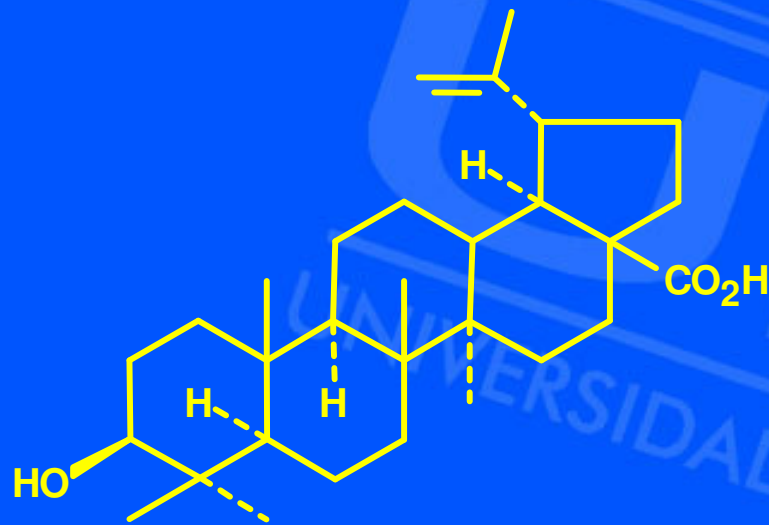
- Inibição de polimerases DNA e topoisomerase II
- B16-F10 melanoma cells
- Reguladores de crescimento vegetal (Phytochemistry, 1528-1533, 2008).

Resultados

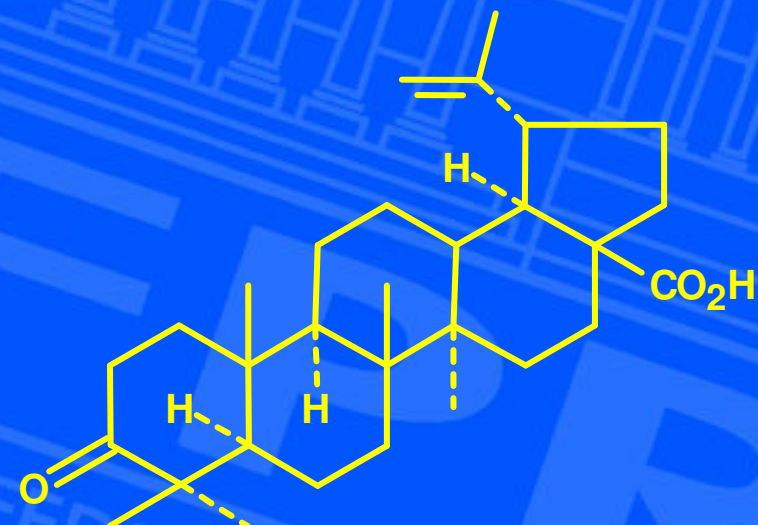


J. Braz. Chem. Soc. 210-213, 2005

Resultados



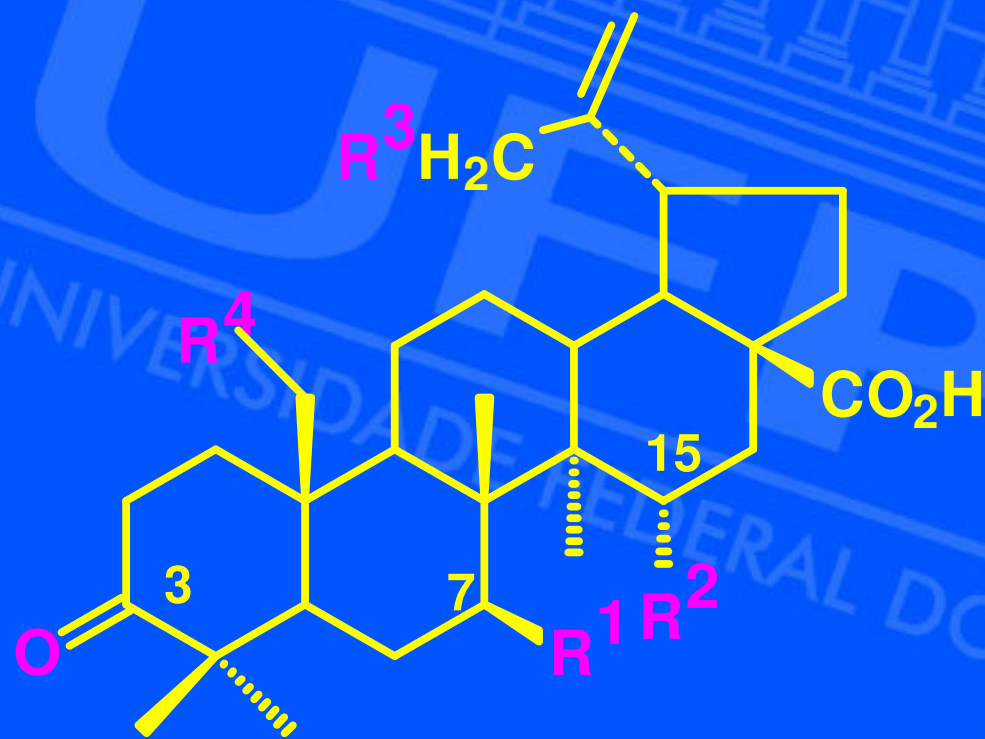
ácido betulínico
anti-melanoma, anti-HIV



ácido betulônico

- *Arthrobotrys, Chaetophoma, Dematium* (Platanus)
- *Colletotrichum* (folhas milho)

Resultados



Phytochemistry 68, 834-839 (2007)

Projetos em Execução



resveratrol

Agradecimentos

- Deisy D. Bueno
- Rogério A. Strapasson
- Denise Z. L. Bastos
- Janaina F. Packer
- Leopoldo C. Baratto
- Keylla Lençone
- CNPq
- FINEP
- Fundação Araucária

Informações - Contato

www.quimica.ufpr.br/bho/index.htm
[/disciplinas/biotransformação](http://www.quimica.ufpr.br/bho/index.htm/disciplinas/biotransformação)

bho@ufpr.br