

STATINI

STATINI SU KLASA LEKOVA KOJI SNIŽAVAJU KONCENTRACIJU HOLESTEROLA U KRVI.

DO TOGA DOLAZI JER STATINI INHIBIRAJU ENZIM *HMG-CoA REDUKTAZU*, KOJI REGULIŠE BRZINU SINTEZE HOLESTEROLA IZ MEVALONSKE KISELINE.

KONSEKVENTNO, SNIŽAVA SE I KONCENTRACIJA LIPOPROTEINA NISKE GUSTINE (low-density lipoprotein, LDL) U KRVOTOKU, A TIME SE USPORAVA I NASTAJANJE NASLAGA HOLESTEROLA U KRVNIM SUDOVIIMA I NJIHOVO ZAČEPLJENJE.

KOD TERAPIJE STATINIMA, SMANJENJE KONCENTRACIJE LIPOPROTEINA NISKE GUSTINE U KRVOTOKU KONSTATUJE SE POSLE NEKOLIKO NEDELJA, MEĐUTIM TERAPIJA ZAHTEVA DALEKO DUŽI PERIOD, ČESTO I DOŽIVOTNO.

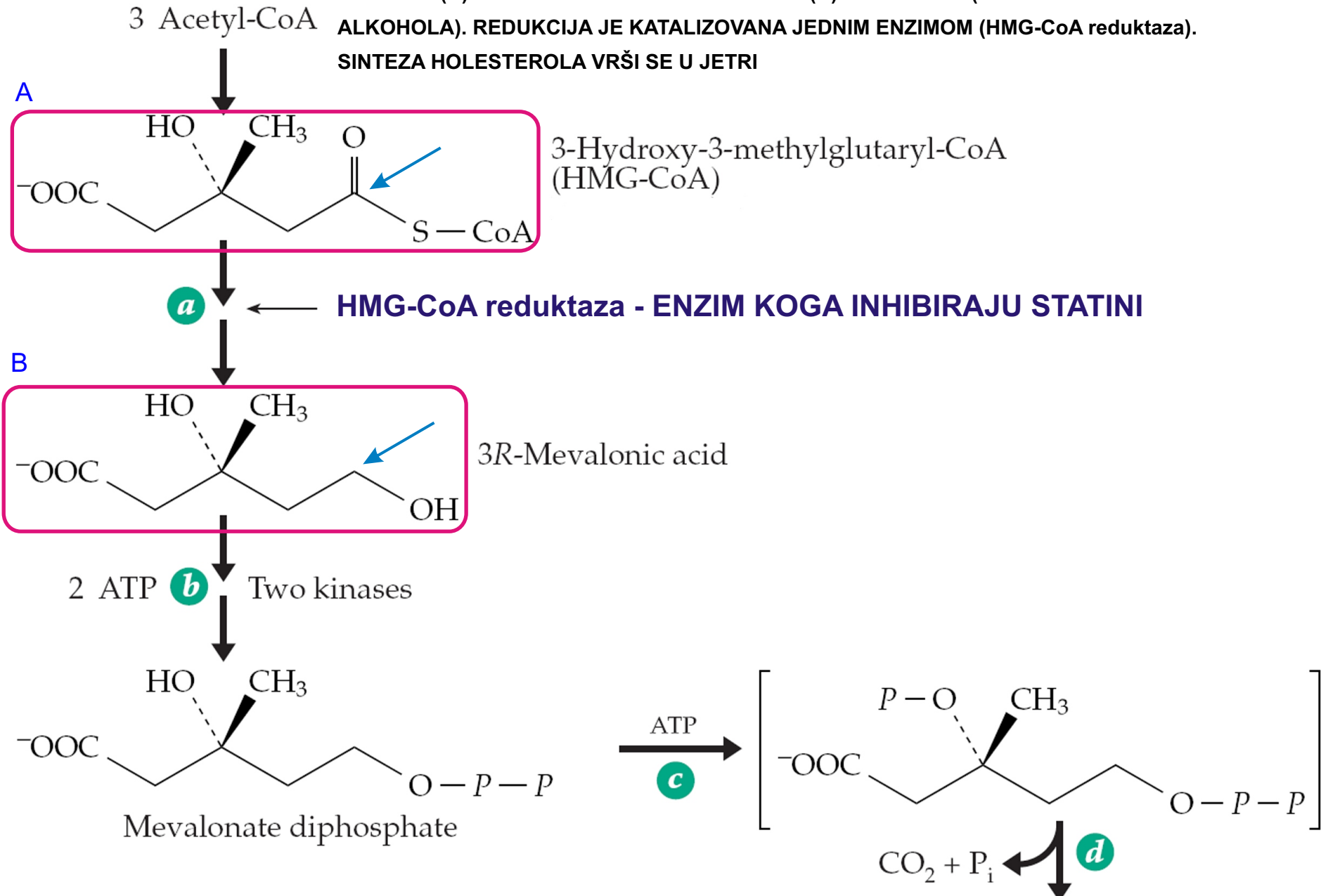
UOBIČAJENO SE PRIMENJUJU RAZLIČITI OBLICI KOMBINOVANE TERAPIJE, ISTOVREMENOM PRIMENOM DVA ILI VIŠE LEKOVA.

U NOVIJE VREME, STATINI SE VRLO ŠIROKO PRIMENJUJU U LEČENJU I PREVENCIJI KORONARNIH OBOLJENJA, A OBIMNE STUDIJE POKAZUJU NJIHOV IZRAZITO POZITIVAN TERAPIJSKI UČINAK.

1228

DEO CIKLUSA BIOSINTEZE HOLESTEROLA

HMG-CoA (A) REDUKUJE SE DO MEVALONATA (B) U DVE FAZE (REDUKCIJA TIOESTRA DO ALKOHOLA). REDUKCIJA JE KATALIZOVANA JEDNIM ENZIMOM (HMG-CoA reduktaza). SINTEZA HOLESTEROLA VRŠI SE U JETRI



SHEMATSKI PRIKAZ KRVNIH SUDOVA - IZGLED NORMALNIH KRVNIH SUDOVA KAO I ONIH KOJI SU SUŽENI USLED NASLAGA HOLESTEROLA

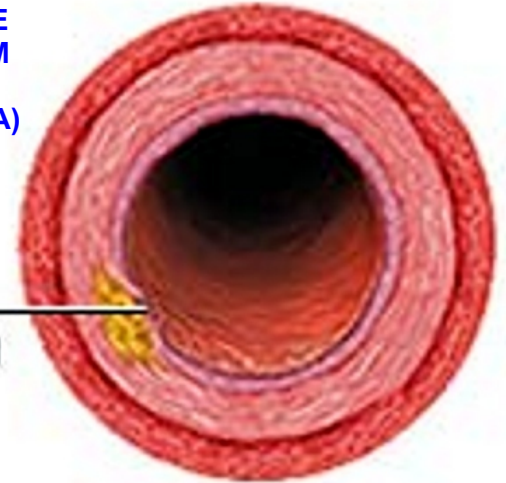
POPREČNI PRESEK
NORMALNE
ARTERIJE

Normal cut-
section of
artery

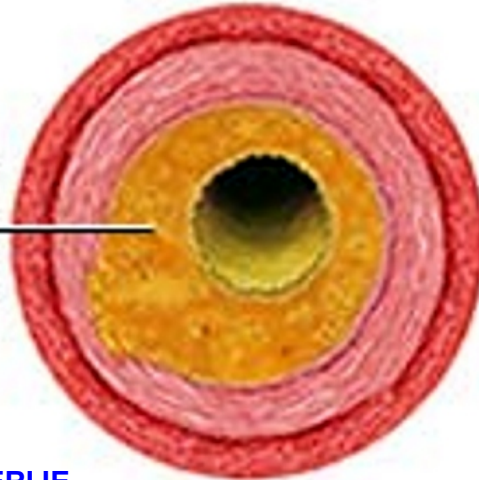


OŠTEĆENJE UNUTRAŠNJEG
ZIDA ARTERIJE
KALCIFIKATOM
(NASLAGOM
HOLESTEROLA)

Tear in
artery wall

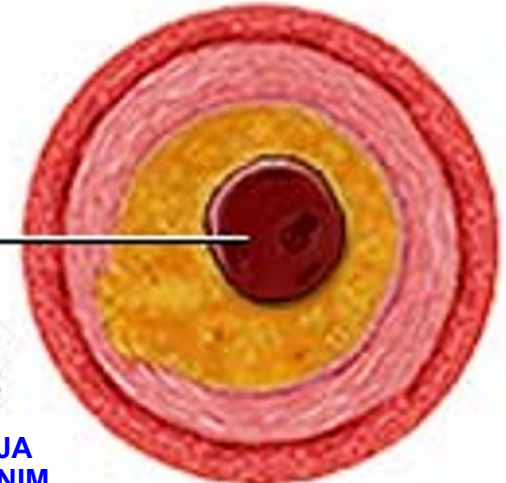


Fatty material
is deposited
in vessel wall



SUŽENJE ARTERIJE
USLED NASLAGE
HOLESTEROLA
(KALCIFIKAT)

Narrowed
artery
becomes
blocked by
a blood clot



SUŽENA ARTERIJA
BLOKIRANA KRVNIM
UGRUŠKOM (TROMBOM);

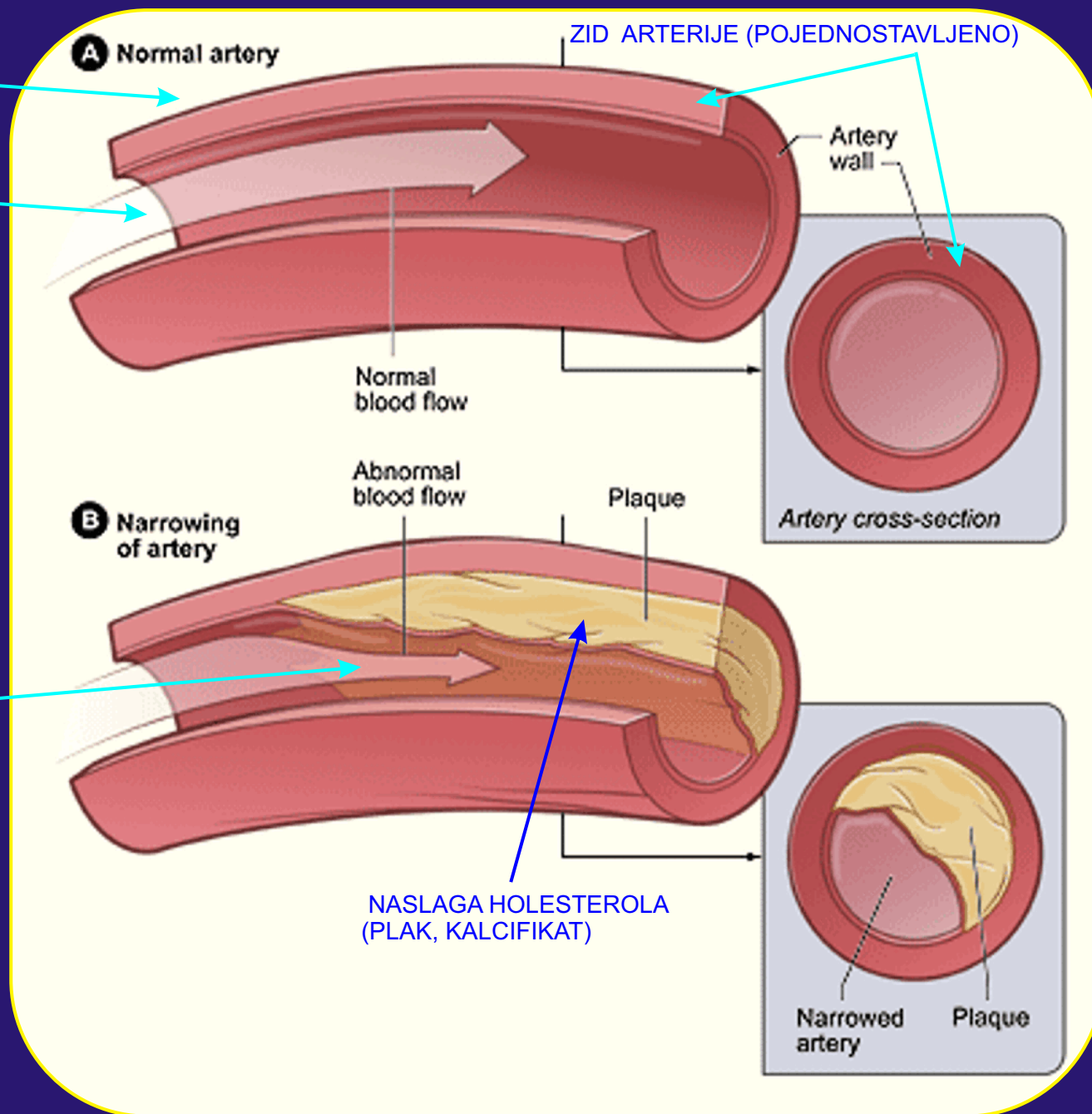
SHEMATSKI PRIKAZ KRVNIH SUDOVA - IZGLED NORMALNIH KRVNIH SUDOVA KAO I ONIH KOJI SU SUŽENI USLED NASLAGA HOLESTEROLA

A. NORMALNA ARTERIJA

NORMALAN PROTOK KRVI

A Normal artery

ZID ARTERIJE (POJEDNOSTAVLJENO)



Artery wall

Normal blood flow

Artery cross-section

Abnormal blood flow

Plaque

B Narrowing of artery

B. SUŽENJE U ARTERIJI

ABNORMALAN PROTOK KRVI

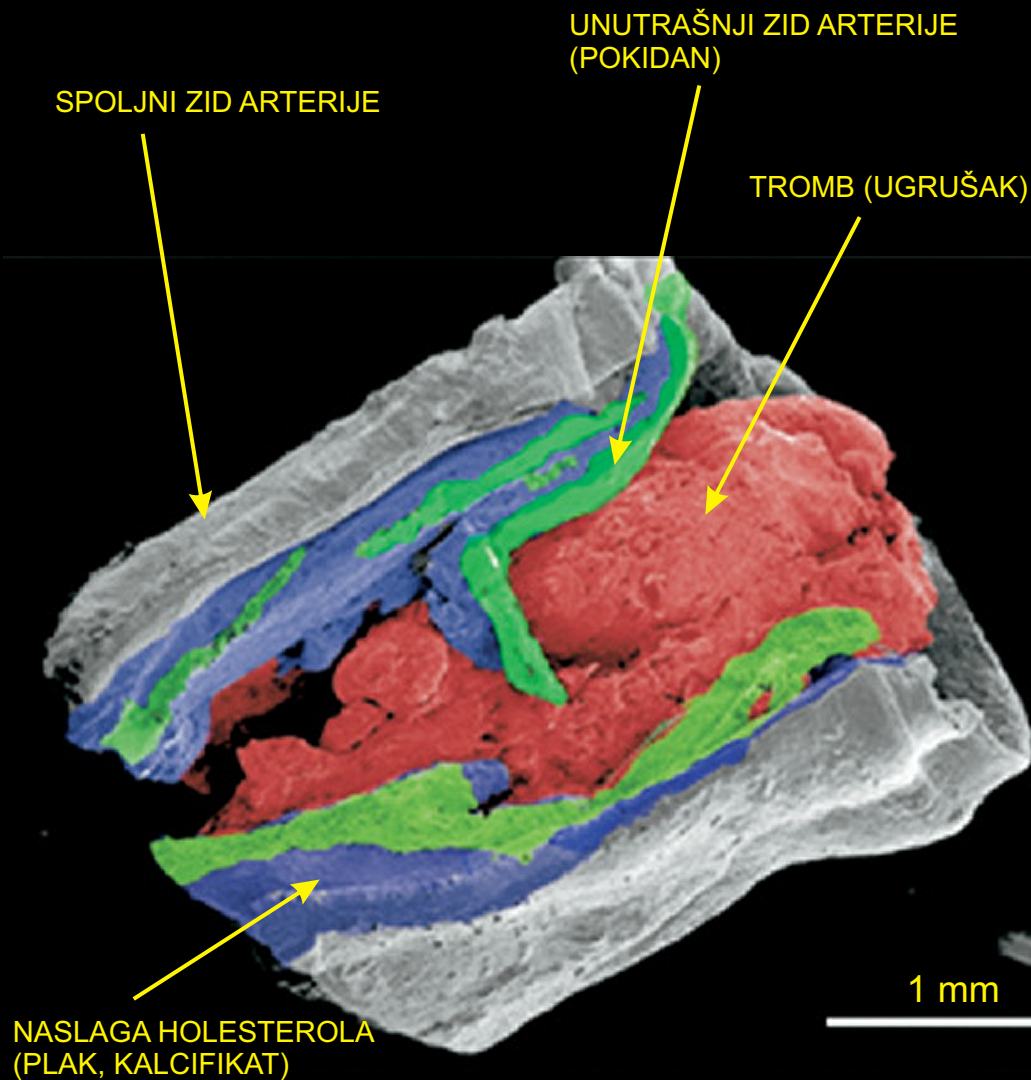
NASLAGA HOLESTEROLA (PLAK, KALCIFIKAT)

Narrowed artery

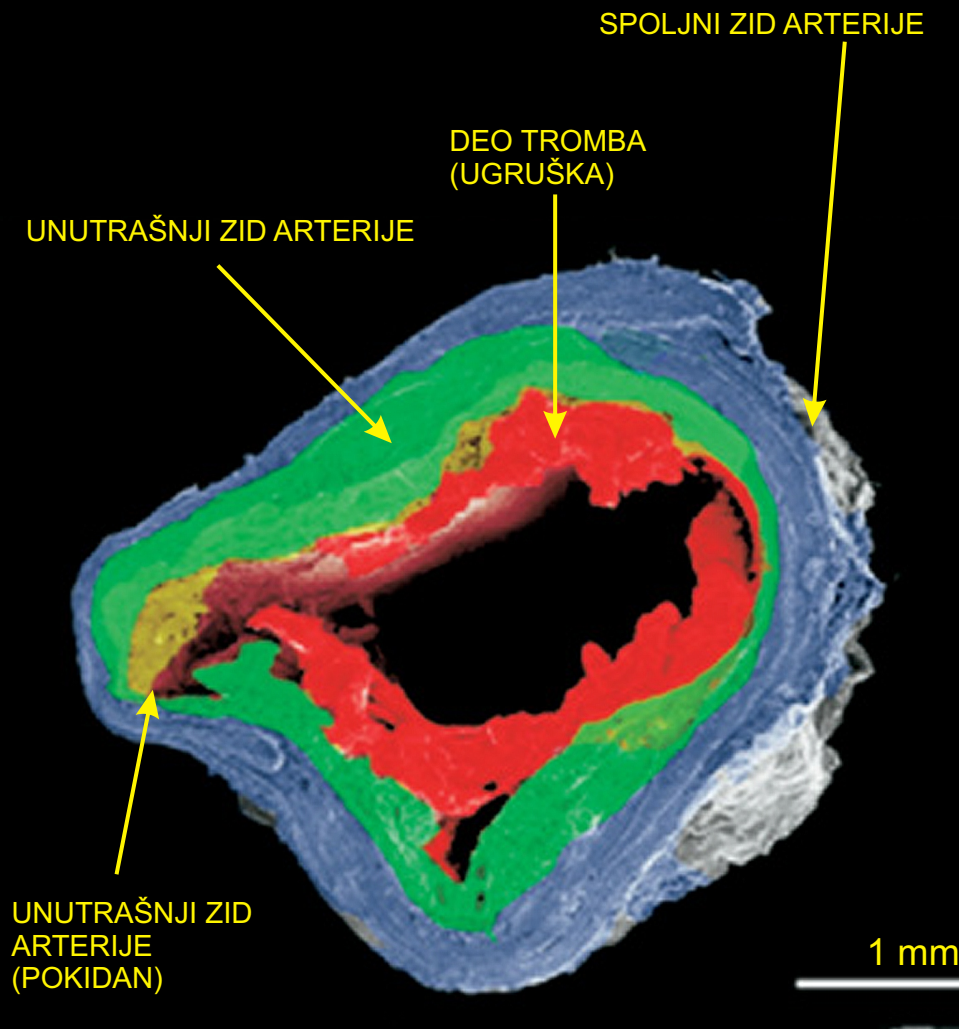
Plaque

SKENIRAJUĆA ELEKTRONSKA MIKROGRAFIJA ARTERIJE PACIJENTA KOJI JE UMRO OD INFARKTA. (SLIKA JE OBOJENA DIGITALNO, PROIZVOLJNIM BOJAMA.)

UZDUŽNI PRESEK

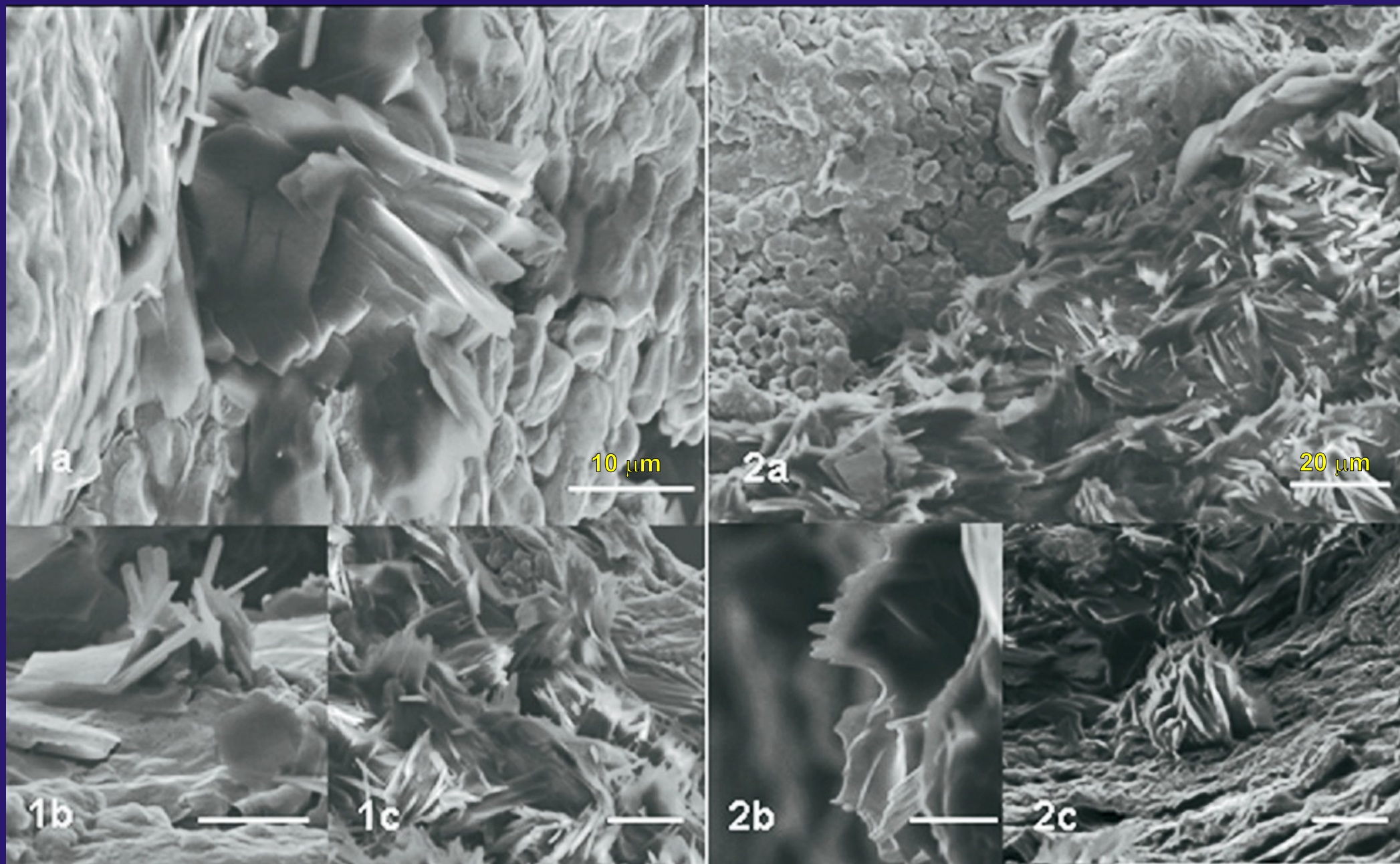


POPREČNI PRESEK



“Effect of Cholesterol Crystals on Plaques and Intima in Arteries of Patients With Acute Coronary and Cerebrovascular Syndromes”
Am. J. Cardiol. 2009; 103:959 –968

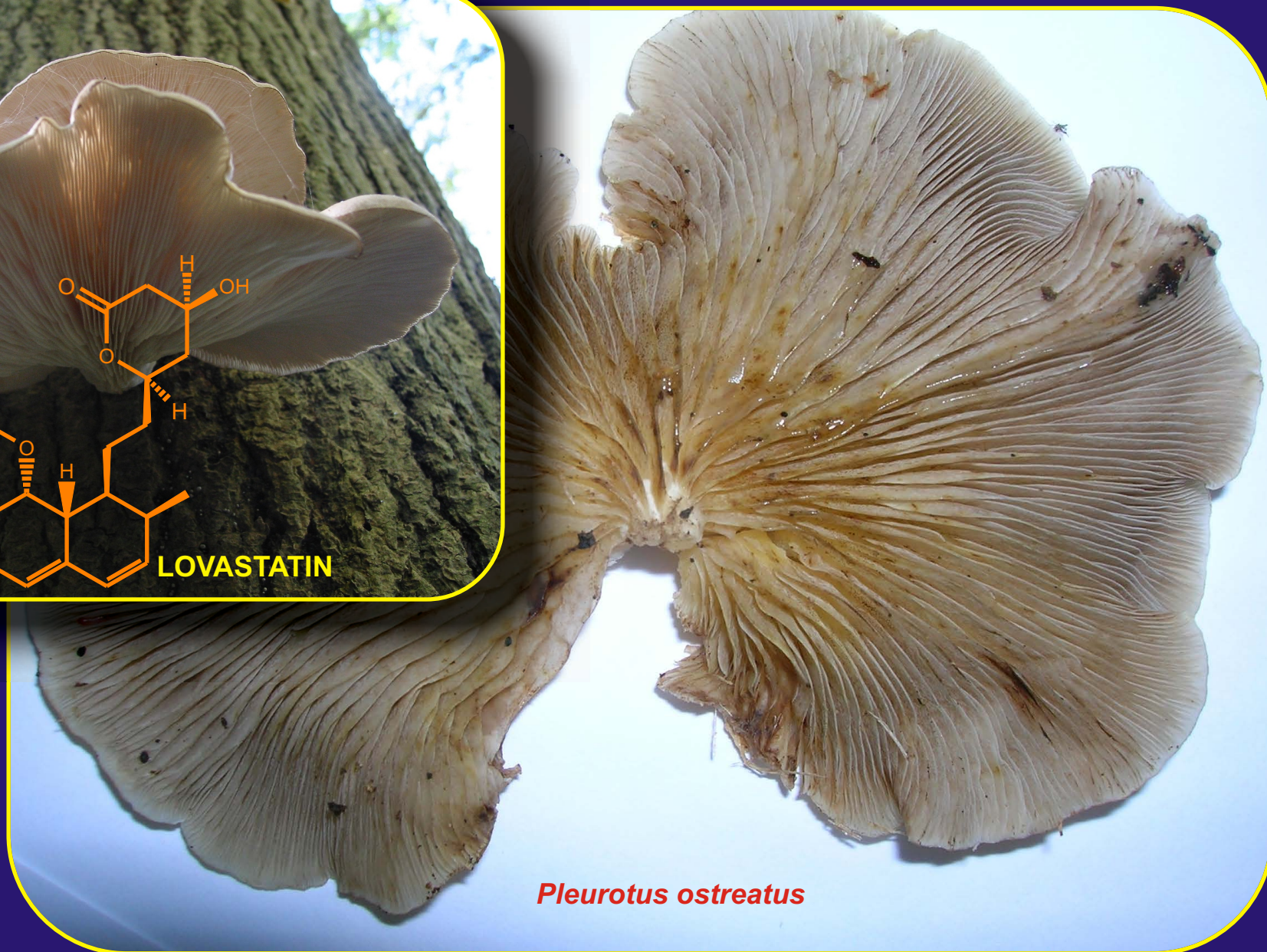
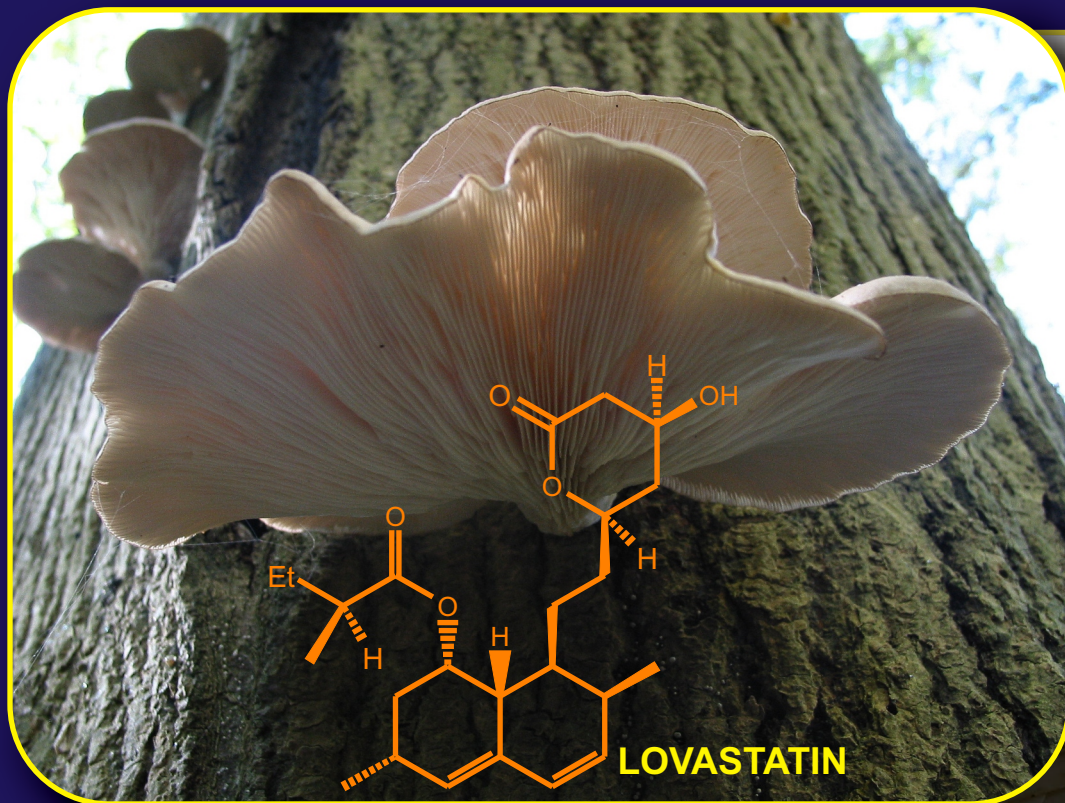
SKENIRAJUĆA ELEKTRONSKA MIKROGRAFIJA ARTERIJE PACIJENTA KOJI JE UMRO OD INFARKTA. KRISTALI HOLESTEROLA PRI RAZLIČITIM UVEĆANJIMA



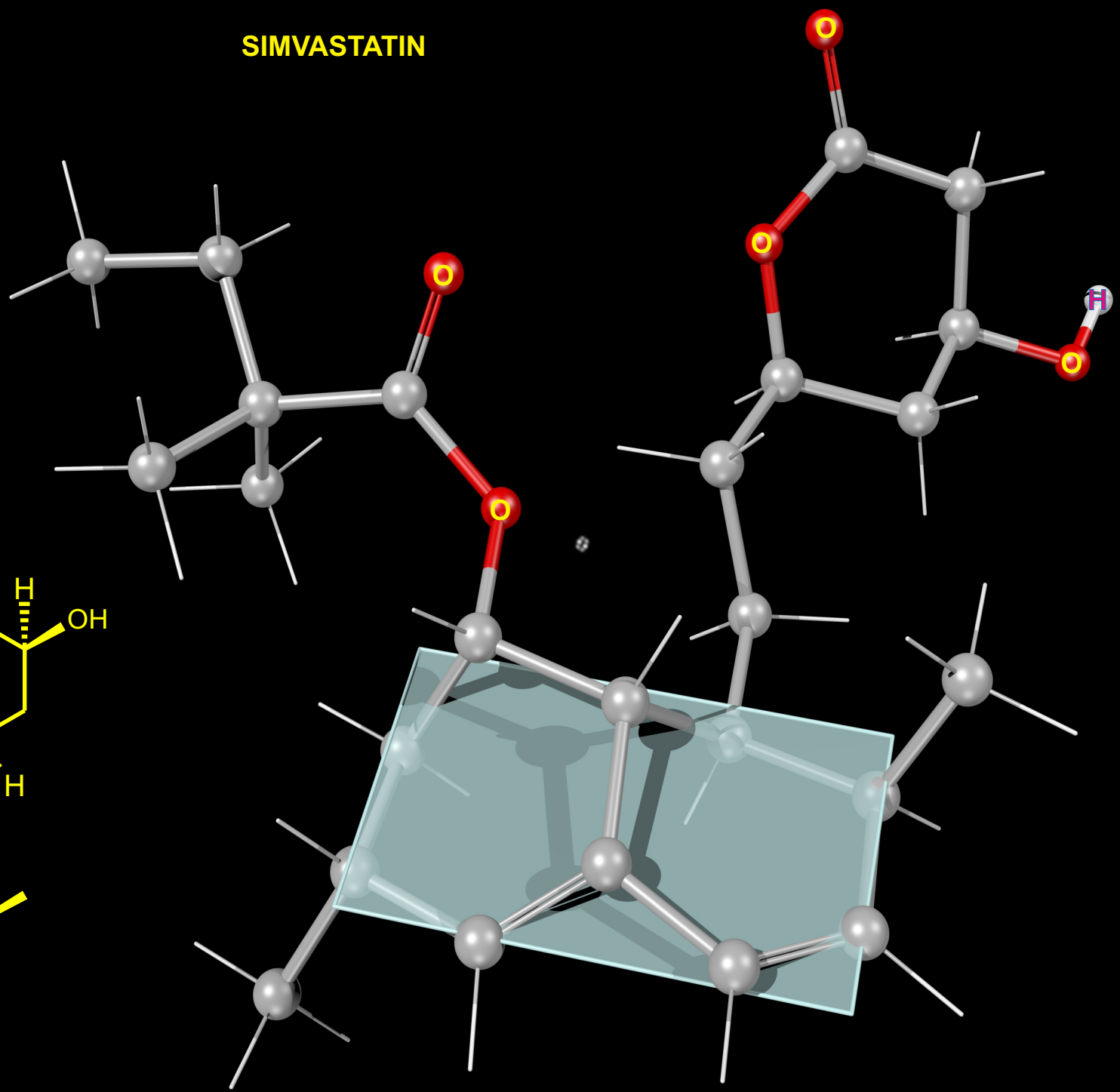
STATINI BIOGENOG POREKLA

-METABOLITI PLESNI (*Penicillium citrinum*, *Aspergillus terreus* i dr.) KAO I NEKIH VRSTA PEČURAKA

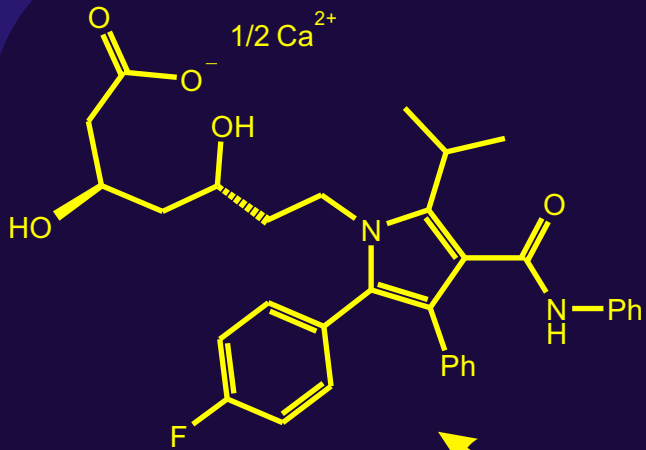
-INDUSTRIJSKI SE PROIZVODE FERMENTACIJOM



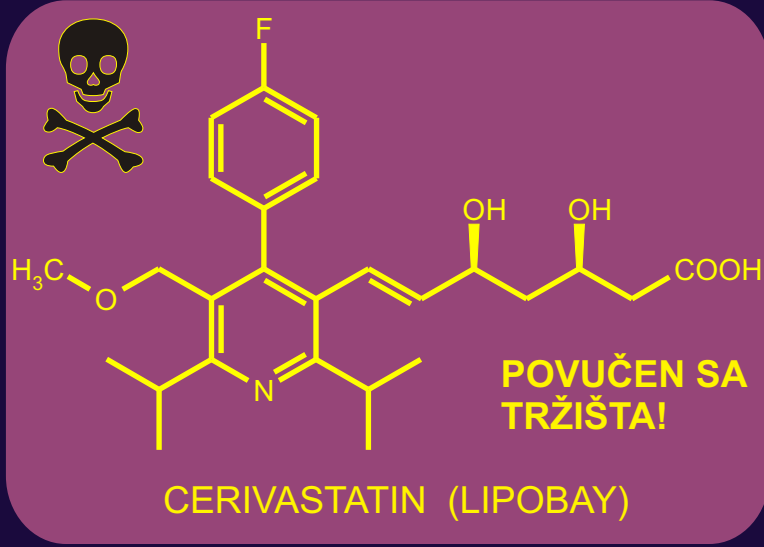
SIMVASTATIN



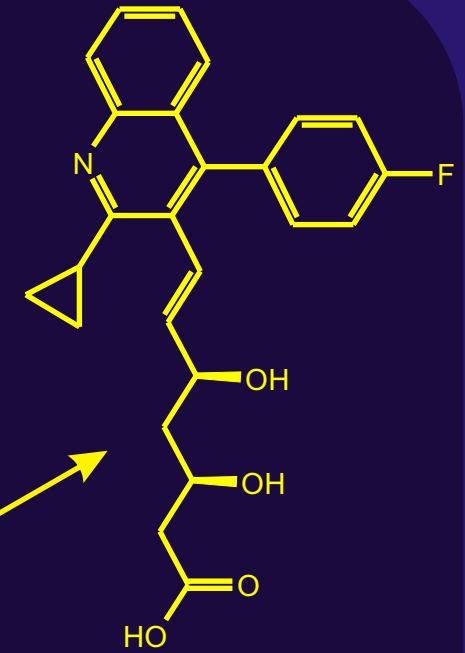
STATINI SINTETIČKOG POREKLA - STRUKTURA



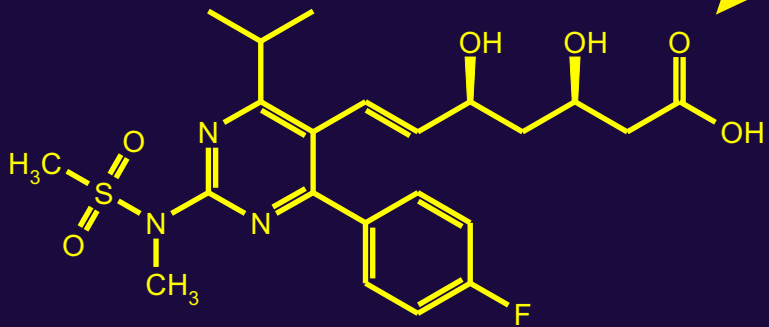
ATORVASTATIN



STRUKTURE STATINA
SINTETIČKOG POREKLA



PITAVASTATIN

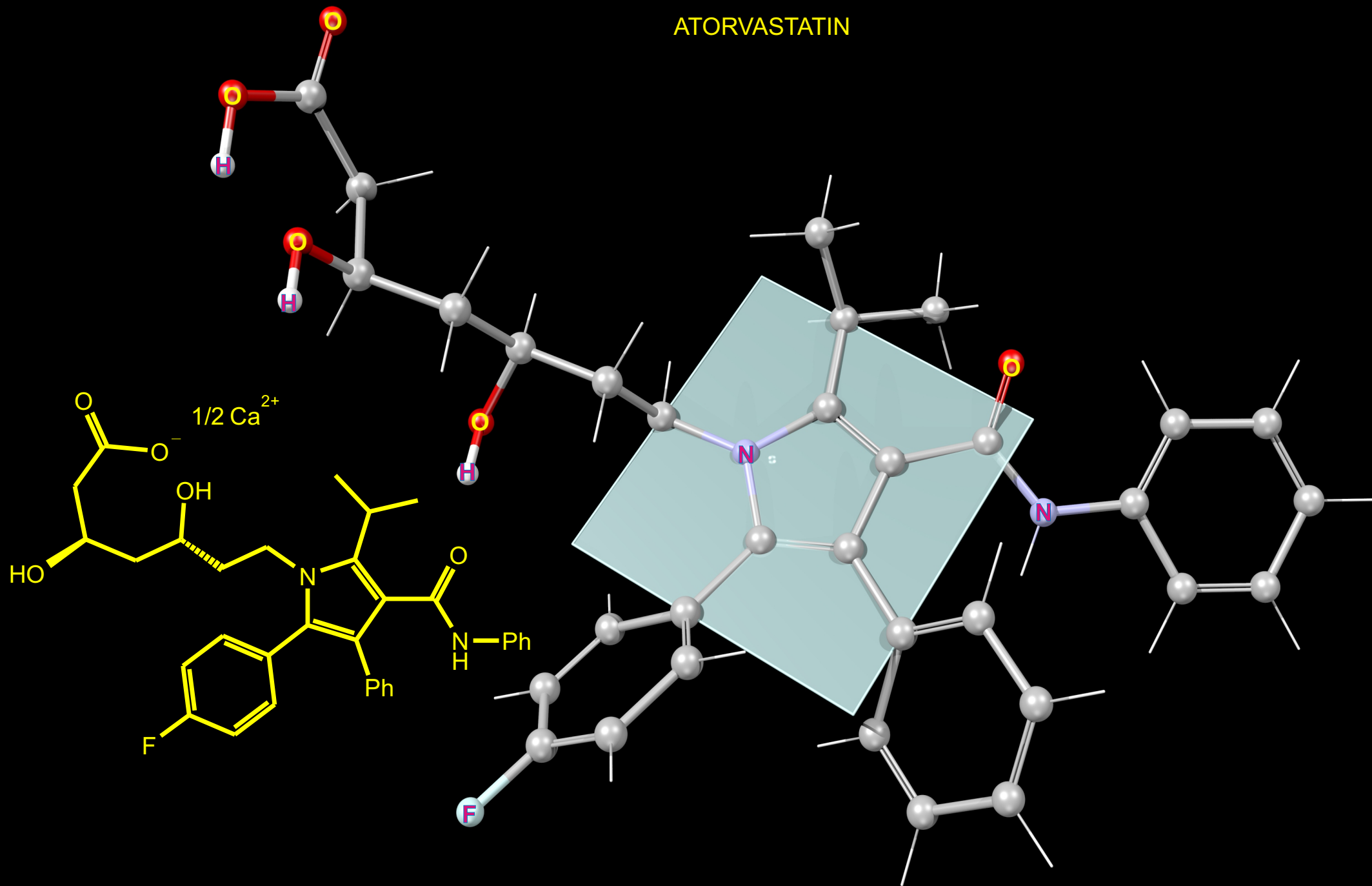


ROSUVASTATIN



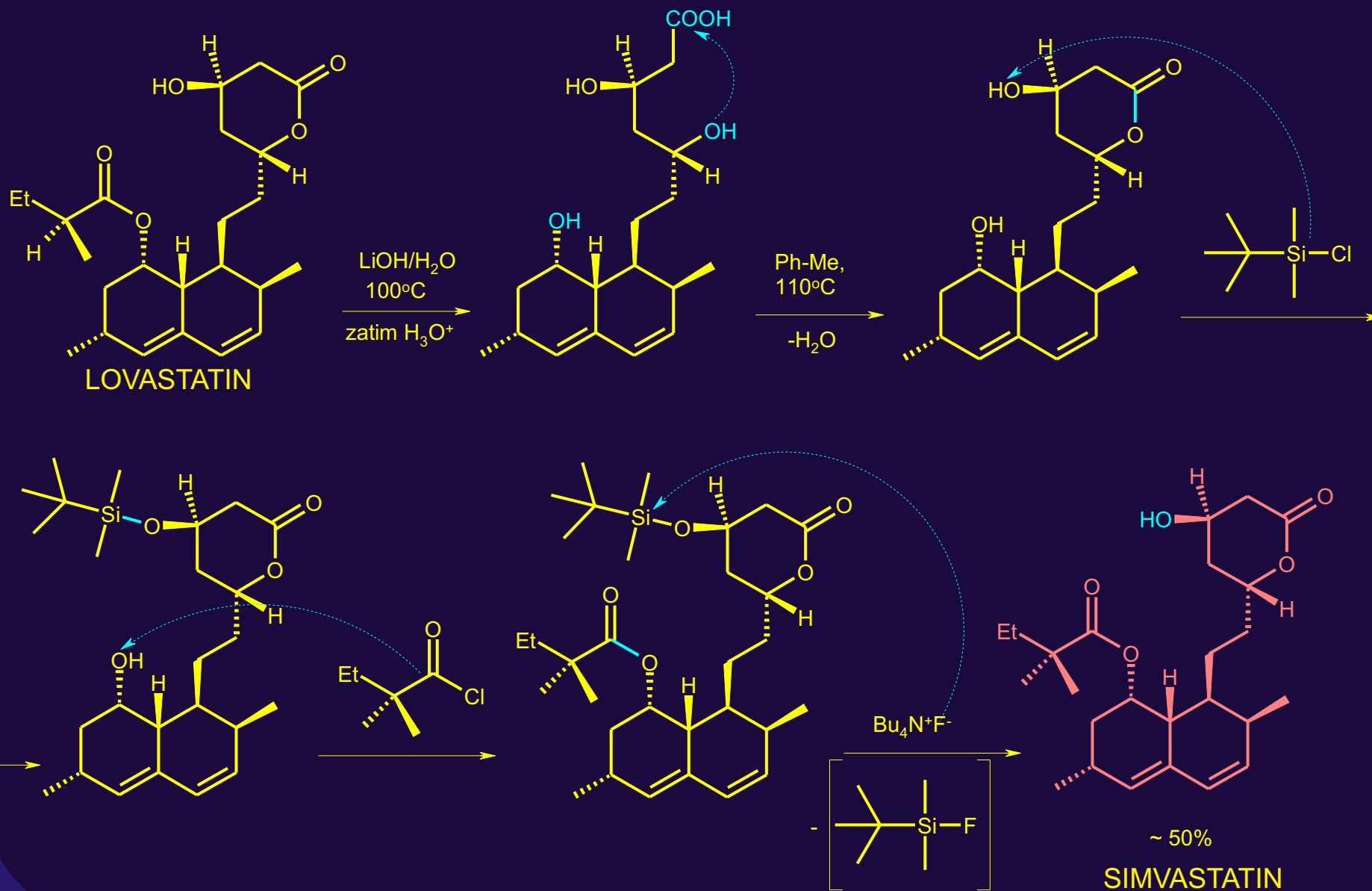
FLUVASTATIN

ATORVASTATIN



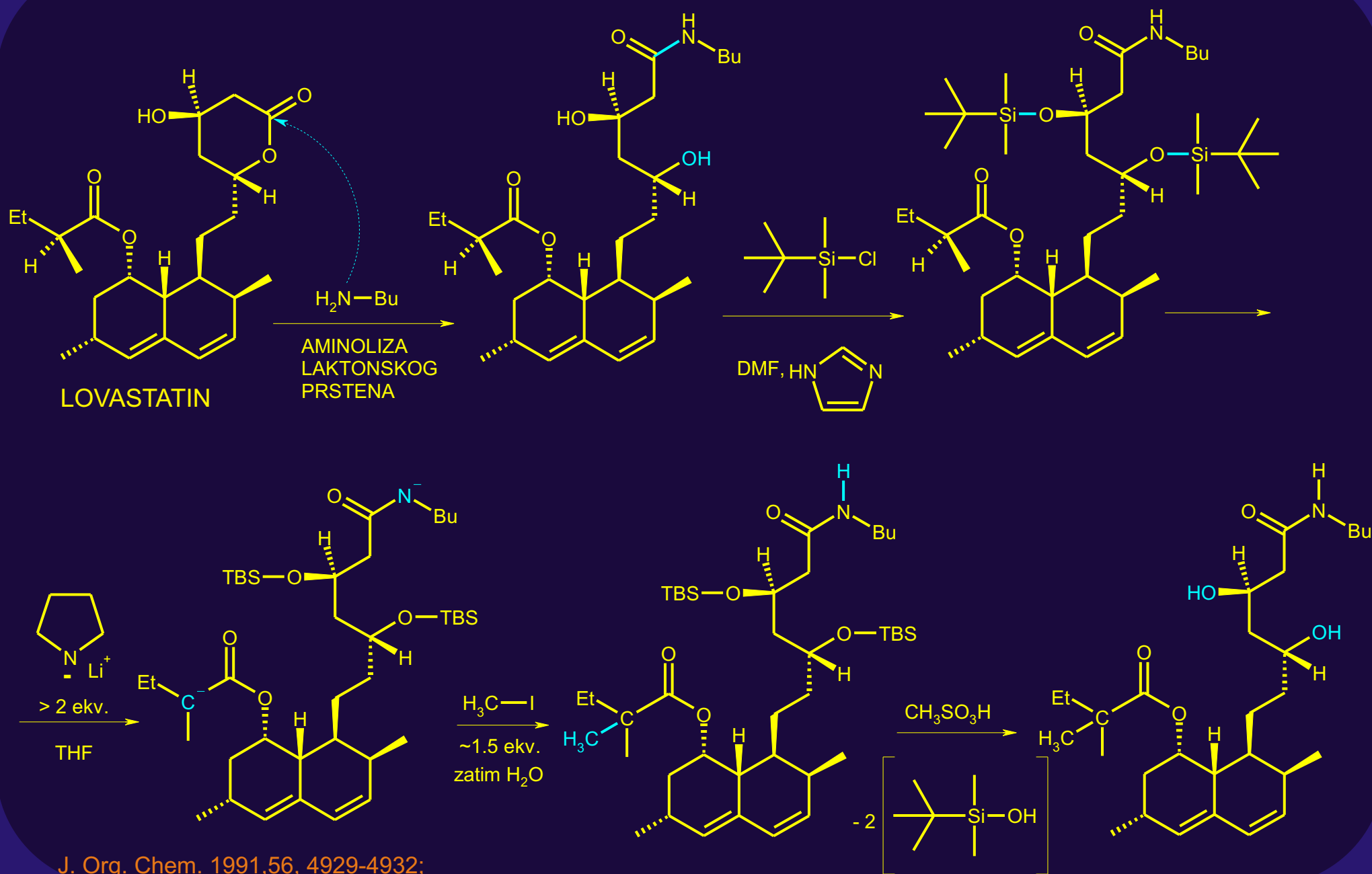
PARCIJALNE SINTEZE SIMVASTATIN-a IZ BIOGENOG PREKURSORA - LOVASTATINA-a

SINTEZA 1



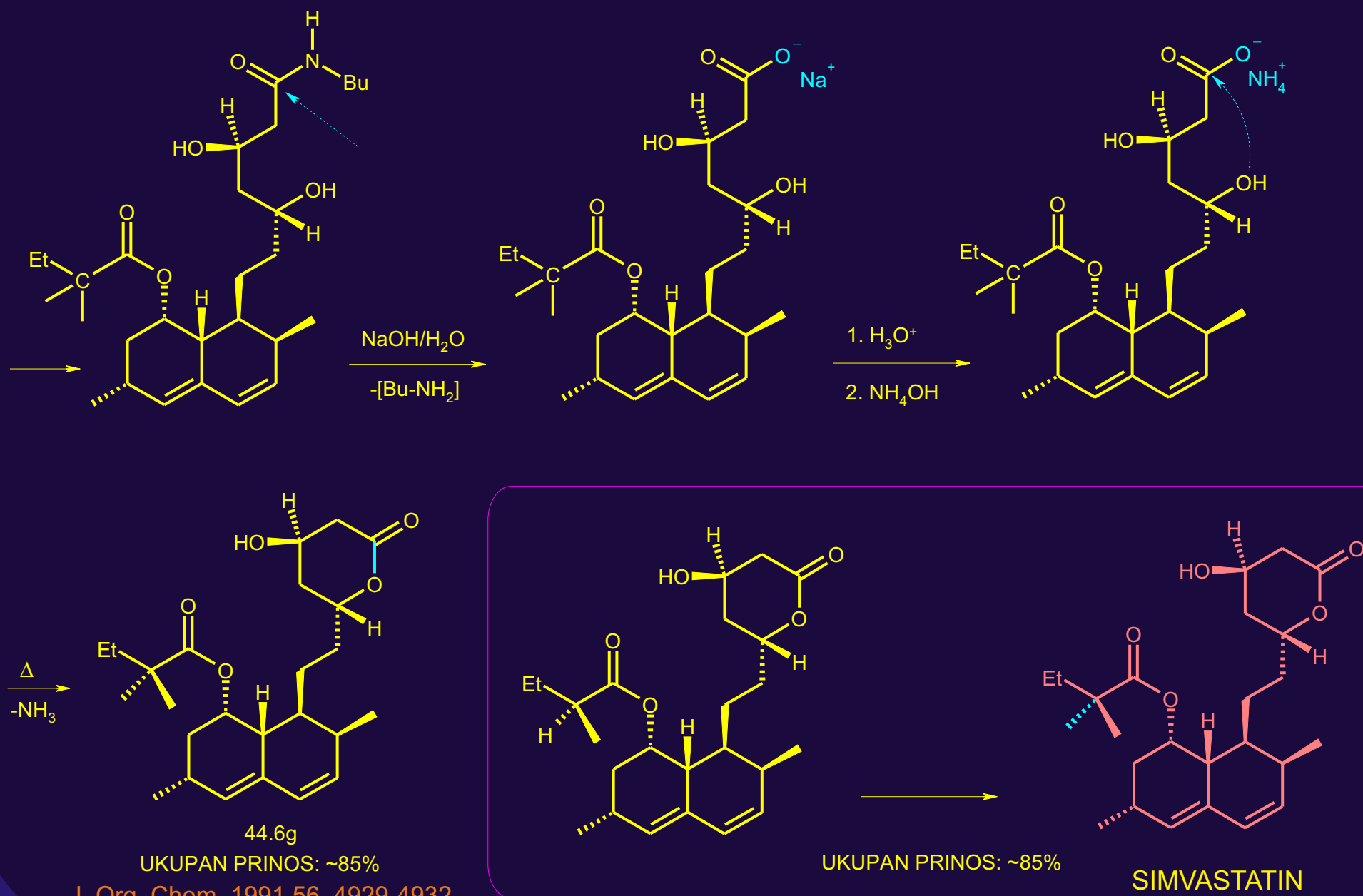
PARCIJALNE SINTEZE SIMVASTATIN-a IZ BIOGENOG PREKURSORA - LOVASTATINA-a

SINTEZA 2



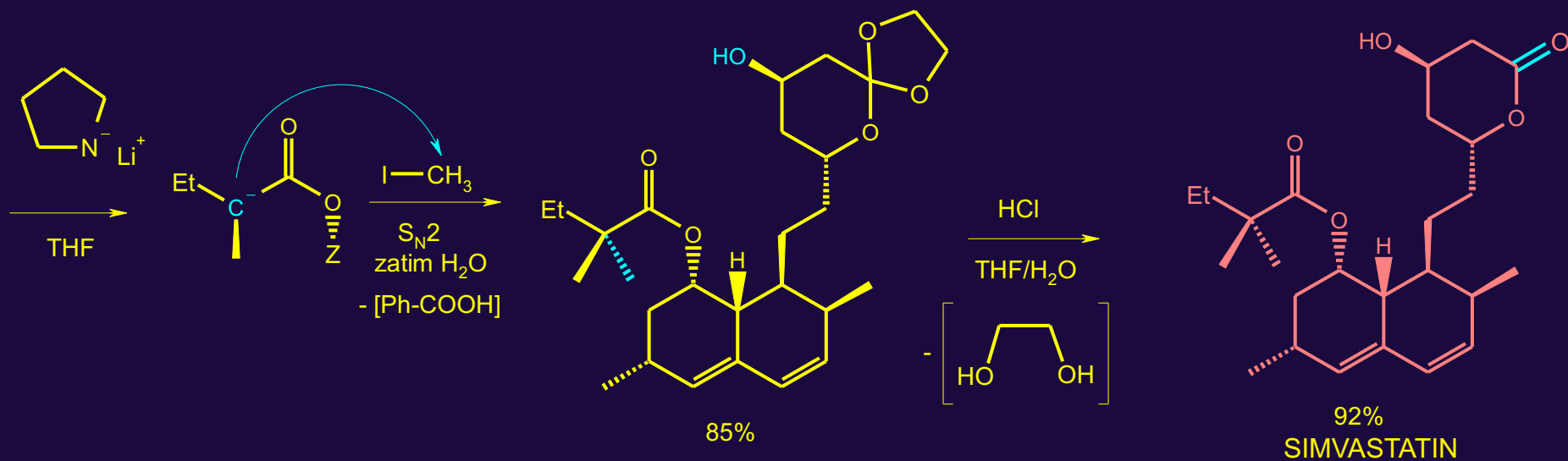
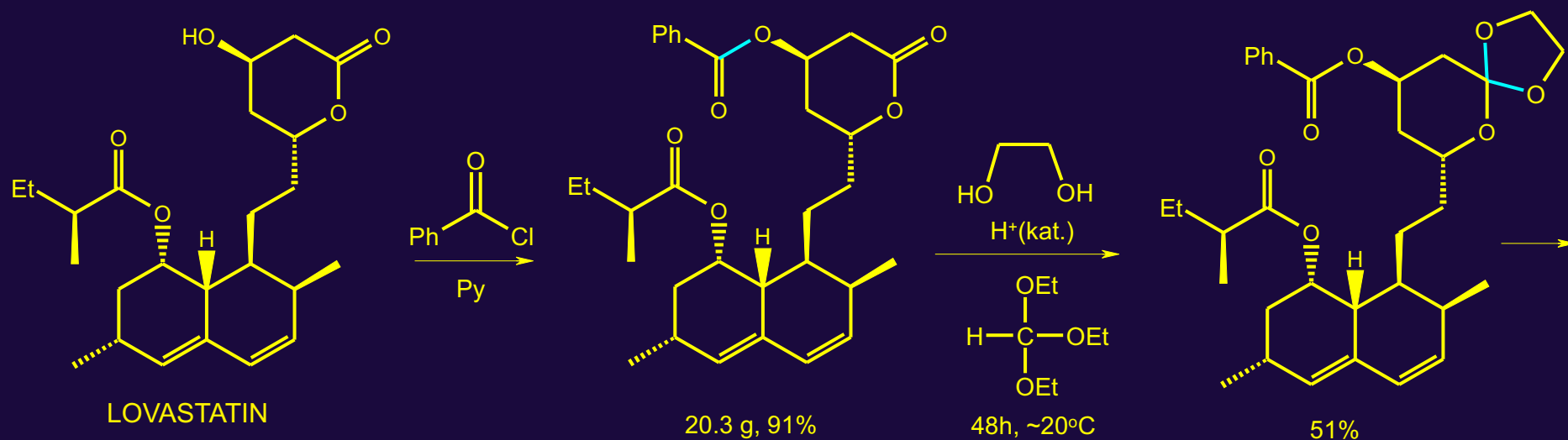
PARCIJALNE SINTEZE SIMVASTATIN-a IZ BIOGENOG PREKURSORA - LOVASTATINA-a

SINTEZA 2 - nastavak



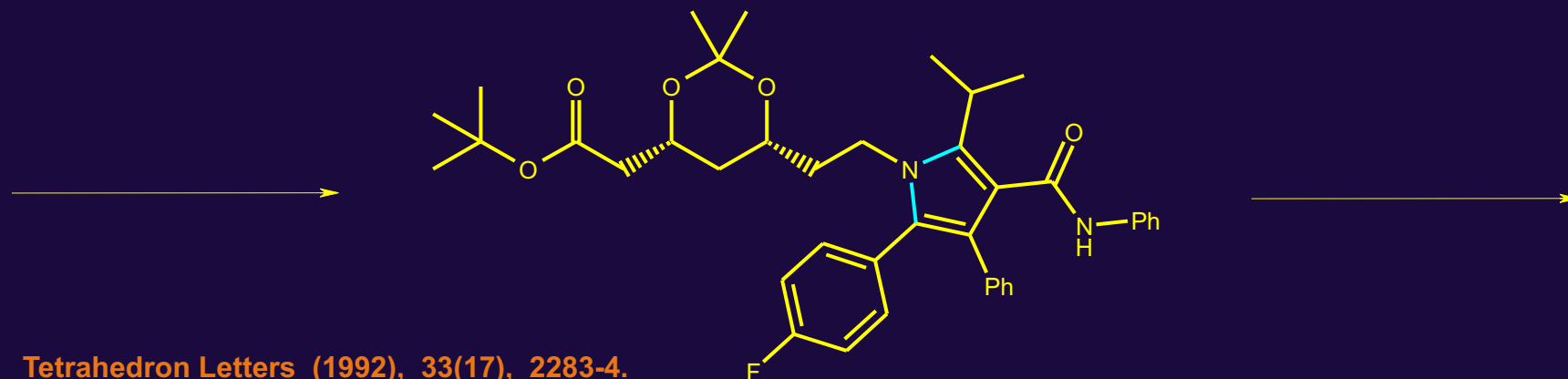
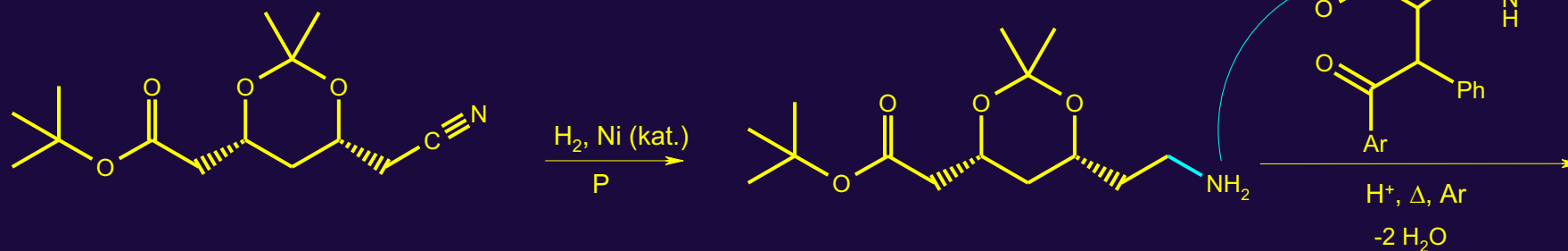
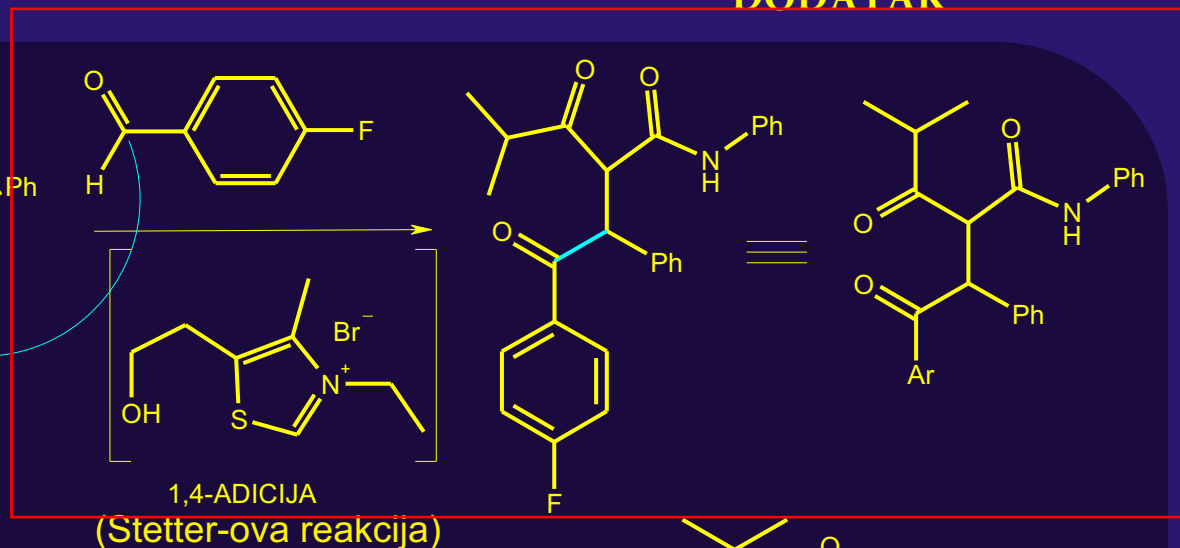
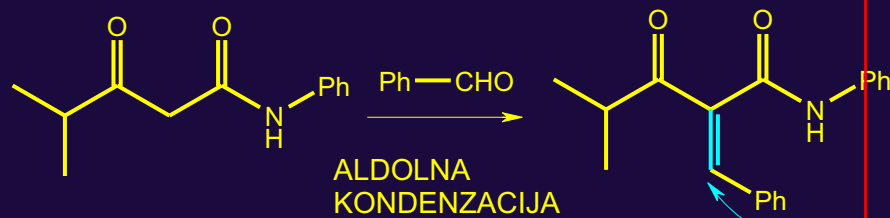
PARCIJALNE SINTEZE SIMVASTATIN-a IZ BIOGENOG PREKURSORA - LOVASTATINA-a

SINTEZA 3



DOBIJANJE SINTETIČKIH STATINA - SINTEZA ATORVASTATIN-a

DODATAK

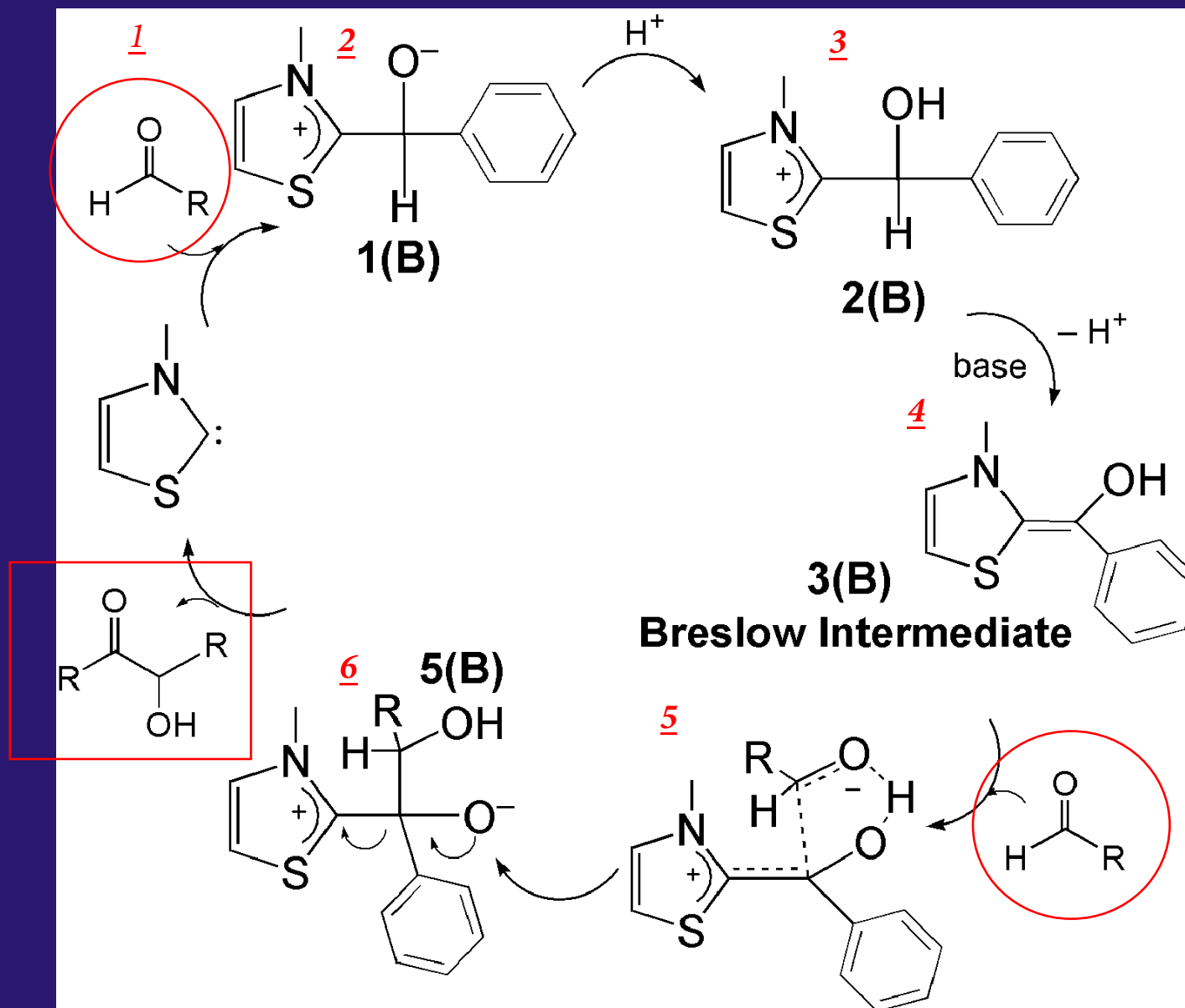


Tetrahedron Letters (1992), 33(17), 2283-4.

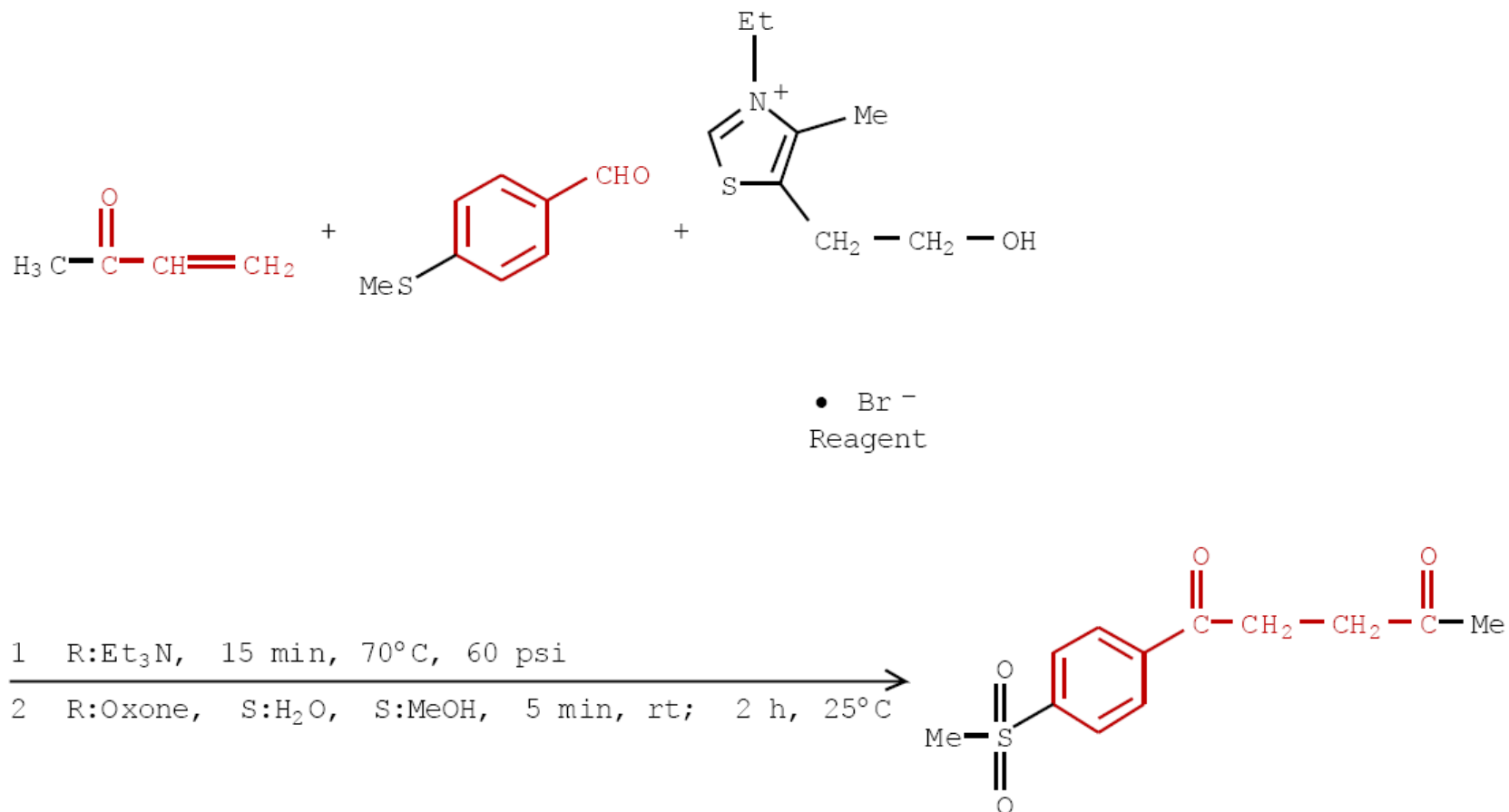
DOBIJANJE SINTETIČKIH STATINA - SINTEZA ATORVASTATIN-a

HIPOTEZA MEHANIZMA STETTER-ove REAKCIJE

DODATAK

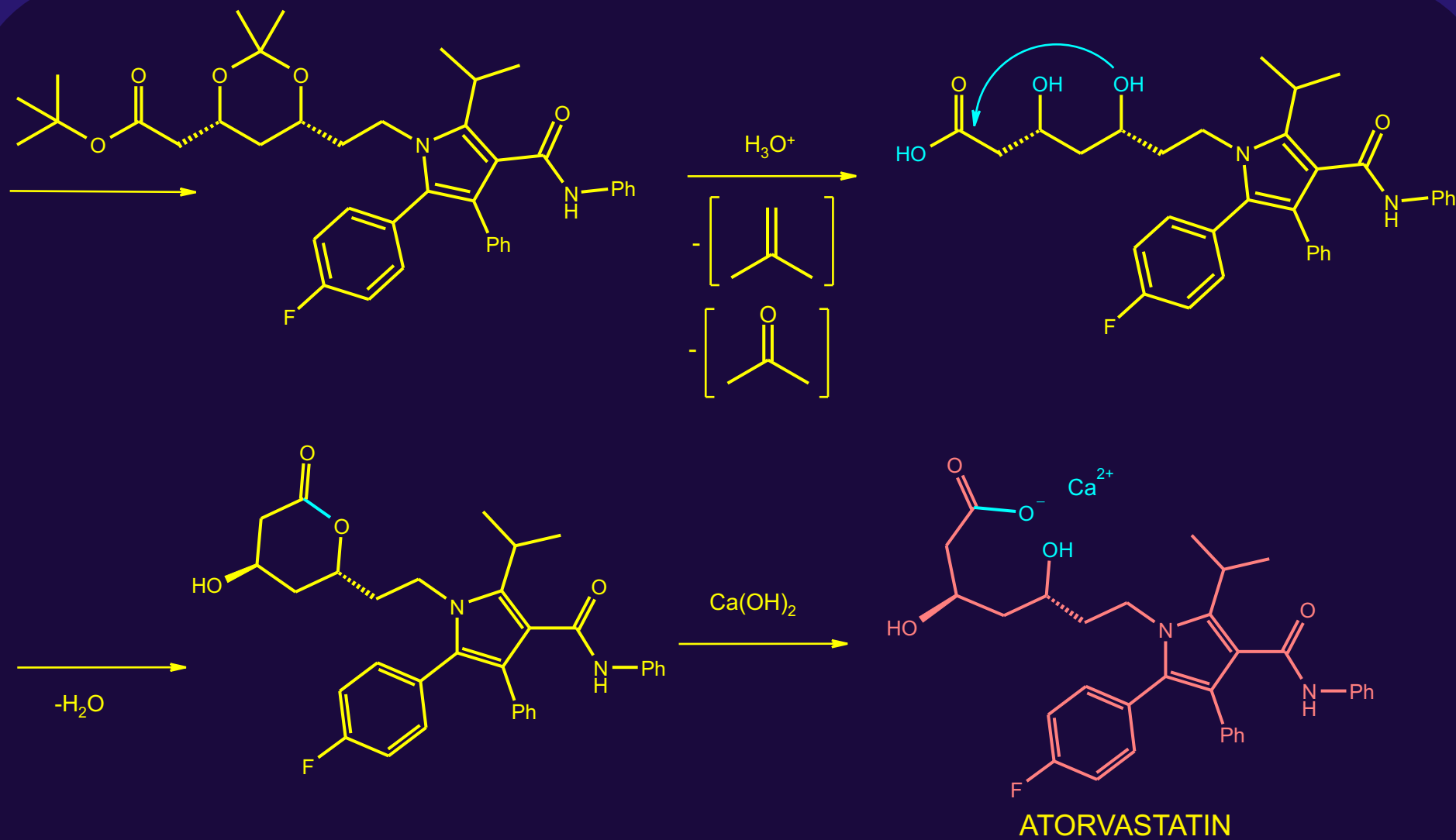


PRIMENA STETTER-ove REAKCIJE U 1,4-ADICIJAMA PO MICHAEL-U



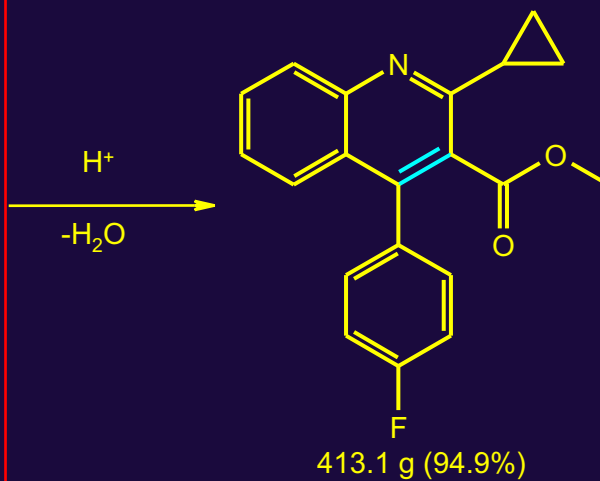
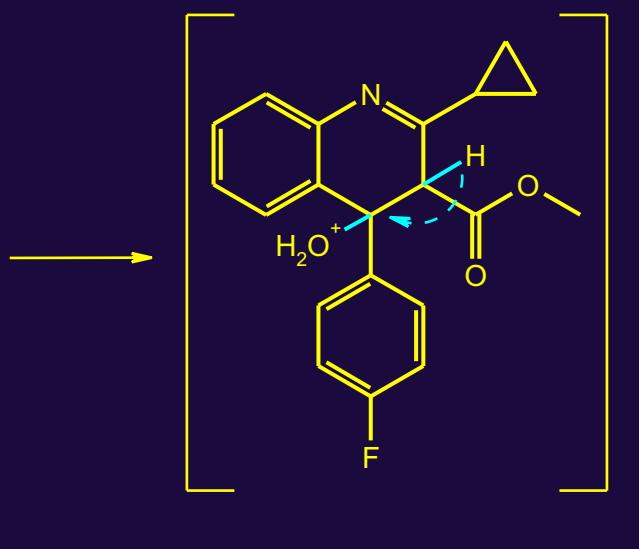
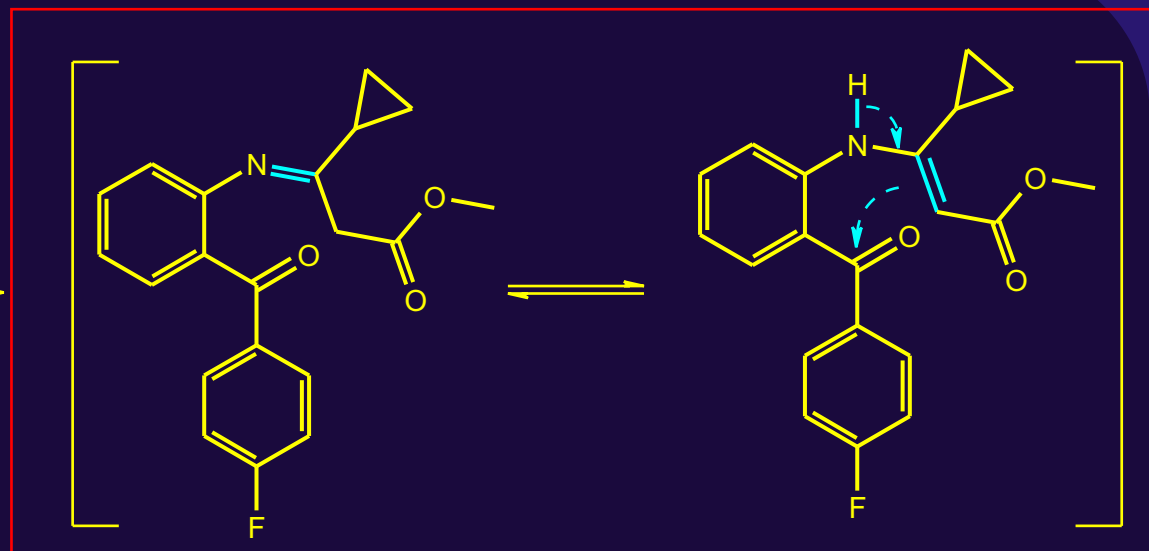
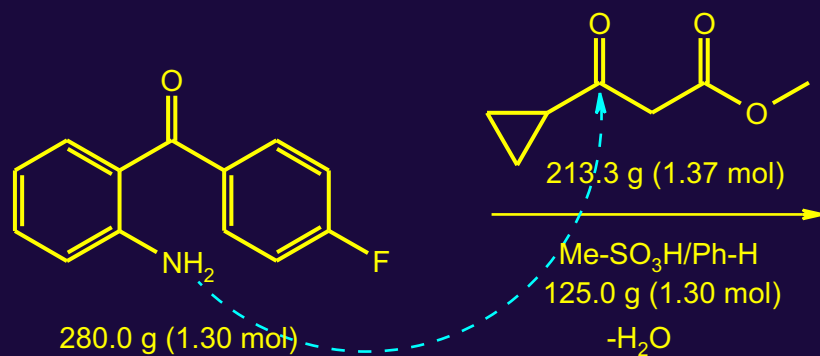
NOTE: 1) regioselective, microwave irradiation, 150W used, Stetter reaction,
 Reactants: 2, Reagents: 3, Solvents: 2,
 Steps: 2, Stages: 2

DOBIJANJE SINTETIČKIH STATINA - SINTEZA ATORVASTATIN-a - nastavak



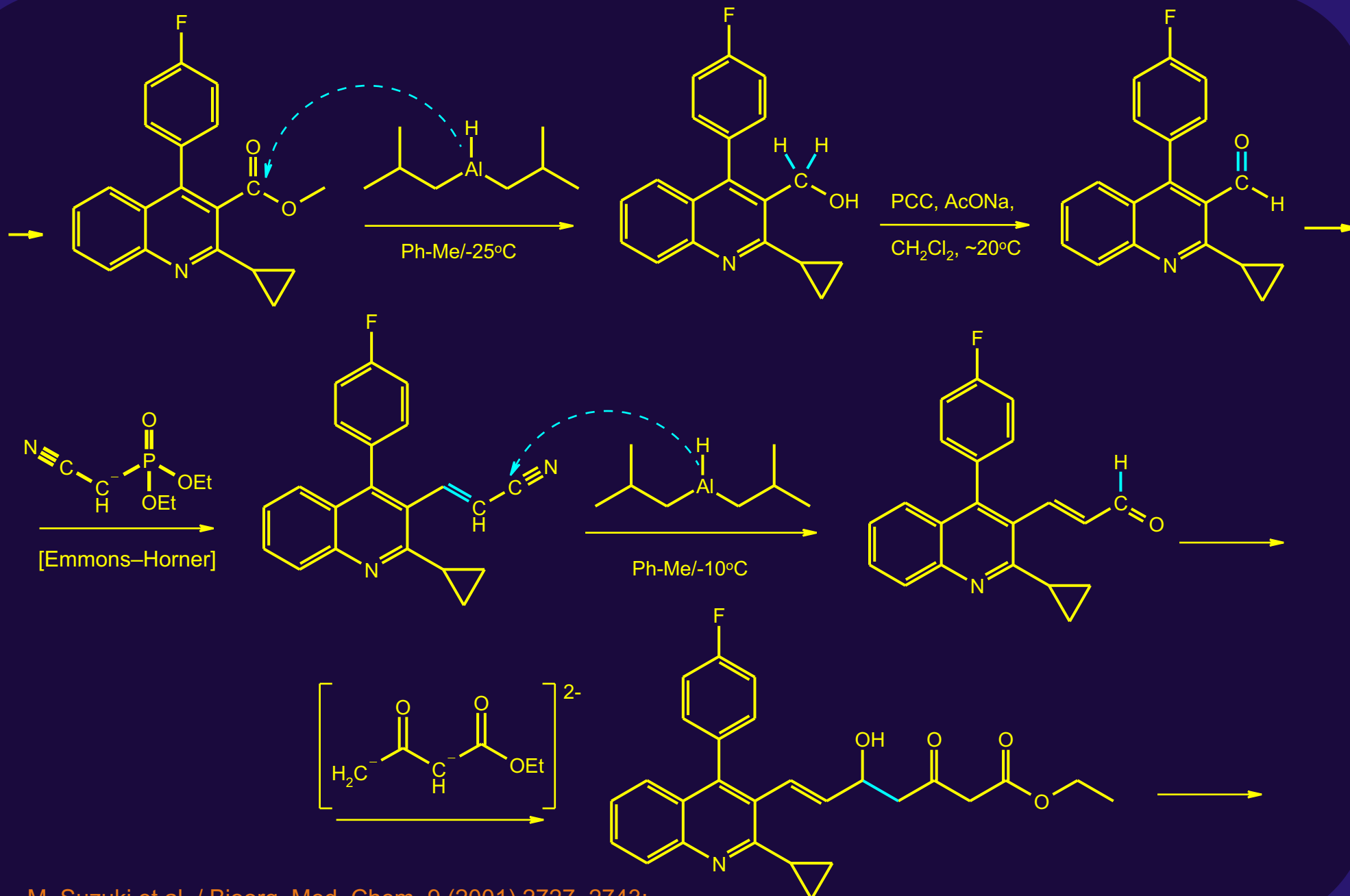
DOBIJANJE SINTETIČKIH STATINA - SINTEZA PITAVASTATIN-a

DODATAK



M. Suzuki et al. / Bioorg. Med. Chem. 9 (2001) 2727–2743;
Synthesis and Biological Evaluations of Quinoline-based HMG-CoA Reductase Inhibitors

DOBIJANJE SINTETIČKIH STATINA - SINTEZA PITAVASTATIN-a - nastavak



DOBIJANJE SINTETIČKIH STATINA - SINTEZA PITAVASTATIN-a - nastavak

