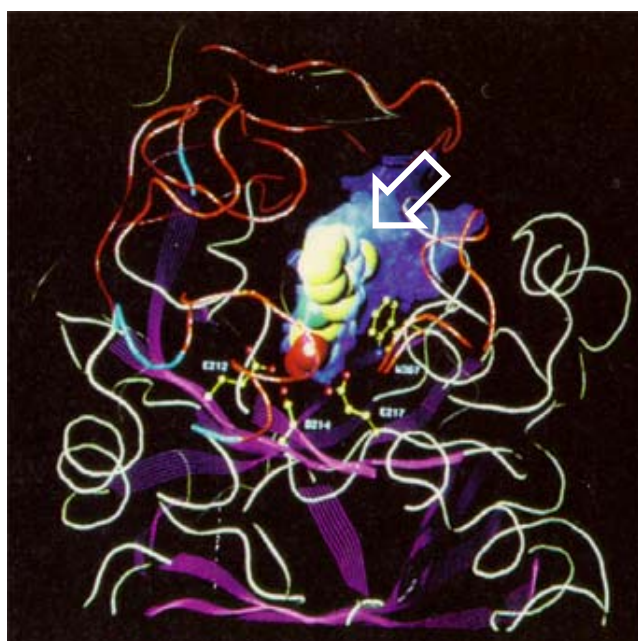
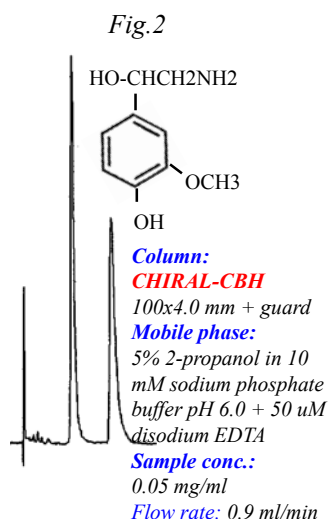
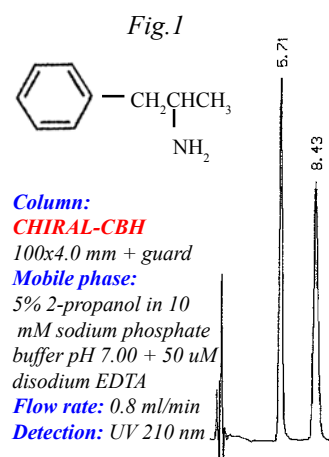


CHIRAL-CBH: A unique column for resolution of a wide variety of drugs and endogenous compounds

A wide variety of basic drugs and endogenous compounds can be separated on the **CHIRAL-CBH** column. Cellobiohydrolase (CBH) is the chiral selector in the CHIRAL-CBH column. CBH is an extremely stable molecule, which has been immobilized onto spherical 5 μm silica particles. The figure below is a computer-generated picture from an X-ray crystallographic study of CBH. The binding site is the blue shaded tunnel going through the entire CBH structure. From the picture can be seen that a small ligand is bound to the binding site (indicated by the arrow). The view is perpendicular to the binding site.



CHIRAL-CBH separates preferably **basic compounds** also containing **an alcohol, phenol, carbonyl, amide, ether, ester etc.** (strong hydrogen bonding groups). However, **CHIRAL-CBH** can also be used for the resolution of basic compounds **containing a weak hydrogen bonding group** (benzene ring), as is exemplified by amphetamine (Fig.1).



The ability to resolve catecholamines as epinephrine, metanephrine, norepinephrine and normetanephrine is a unique property of the **CHIRAL-CBH** column. The separation of normetanephrine is shown in Fig.2.

The table below shows **examples** of basic drugs and endogenous compounds resolved on the **CHIRAL-CBH** column. The enantioselectivities and resolutions are impressive:

Substance	α	R_s
Acebutolol	4.16	7.33
Bisoprolol	3.95	7.82
Dobutamine	1.78	3.41
Dropropizine	1.49	2.85
Epinephrine	1.69	4.00
Norepinephrine	2.12	4.99
Normetanephrine	2.04	4.82
Octopamine	2.50	6.81
Oxybutynine	2.08	3.42
Phenyletanolamine	1.54	3.26
Proxyphylline	1.63	2.47
Tetrahydropapaveroline	1.76	3.45
Toliprolol	6.5	10.80

CHIRAL-CBH has also shown the ability to resolve compounds without basic nitrogens, as is demonstrated for thalidomide in Fig.3.

