

Herein described are deuterated catecholamine derivatives of the general Formula (I) wherein R_1 is deuterium, R_2 , and R_3 are independently selected from hydrogen and deuterium and wherein at least one of R_2 and R_3 has a deuterium enrichment in the range from 0.02 mol% to 100 mol% deuterium, and wherein the deuterium enrichment of R_2 and R_3 is different from each other and that the difference between the deuterium enrichment of R_2 and R_3 is at least 5 percentage points, R_4 is hydrogen, deuterium, C_1 to C_6 -alkyl or C_5 to C_6 -cycloalkyl, deuterated C_1 to C_6 -alkyl or C_5 to C_6 -cycloalkyl, or a group that is easily hydrolytically or enzymatically cleavable under physiological conditions, as well as their physiologically acceptable salts and their stereoisomers, enantiomers or diastereomers in optically pure form. The compounds can easily be prepared by mixing deuterated and non-deuterated compounds in a predefined ratio. The compounds show anti-Parkinson effect at lower doses and show lower side effects.

