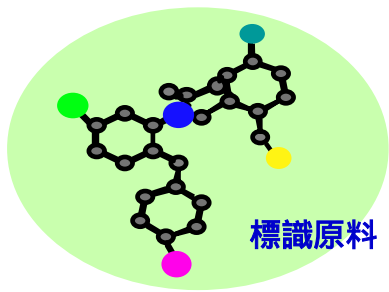
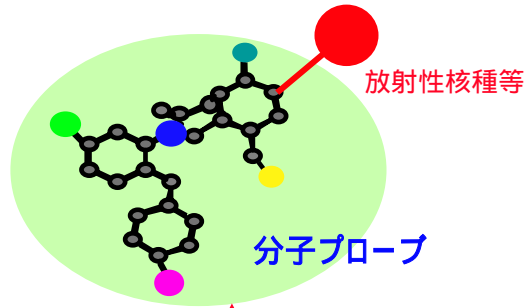


標識技術研究チーム



放射性核種
標識中間体
標識反応
高比放射能



放射性核種

^3H	$^{62}\text{Zn}/^{62}\text{Cu}$	^{15}O
^{14}C	$^{82}\text{Sr}/^{82}\text{Rb}$	^{38}K
	^{63}Zn	^{13}N
	^{64}Cu	^{11}C
	^{76}Br	^{62}Cu
	^{52}Fe	$^{34\text{m}}\text{Cl}$
	^{123}I	^{18}F
	^{124}I	$^{34\text{m}}\text{Cl}$
	^{131}I	...

反応中間体

$^{11}\text{CH}_4, ^{11}\text{CO}_2, ^{11}\text{CO}, ^{11}\text{CH}_3\text{I},$
 $^{11}\text{CH}_3\text{I}, ^{11}\text{CH}_3\text{OTf}, ^{11}\text{CH}_3\text{NO}_2$
 $^{11}\text{COCl}_2, \text{R}^{11}\text{COCl},$
 $\text{R}^{11}\text{CH}_2\text{I}, \text{R}_2^{11}\text{CHI}$
 $^{18}\text{FFPhCOOEt}$
 $^{18}\text{F}, ^{18}\text{F}_2$
 $^{18}\text{F}(\text{CH}_2)_n\text{Br}, ^{18}\text{F}(\text{CH}_2)_n\text{OTf}$
 $^{18}\text{FPhCH}_2\text{Br}, ^{18}\text{FPhCOOEt} \dots$
 $^{34\text{m}}\text{Cl}^-, ^{34\text{m}}\text{Cl}^+, ^{13}\text{NH}_3 \dots$

標識反応

$\text{R-X-H} \longrightarrow \text{R-X-}^{11}\text{CH}_3$
 $\text{R-X} \longrightarrow \text{R-X-CH}_2\text{-CH}_2\text{-}^{18}\text{F}$
 $\text{R-X} \longrightarrow \text{R-}^{11}\text{C(0)-R}$
 $\text{R-CHO} \longrightarrow \text{R-CH(OH)-}^{11}\text{CH}_2\text{NO}_2$
 $\text{R-SnBu}_3 \longrightarrow \text{R-}^{11}\text{CH}_3$
 $\text{Ph-H} \longrightarrow \text{Ph-}^{11}\text{CH}_2\text{CH(NH}_2\text{)COOH}$
 $\text{R-SnBu}_3 \longrightarrow \text{R-}^{18}\text{F}$
 $\text{Protein} \longrightarrow ^{18}\text{FPhC(0)-Protein}$
 $\text{R-X} \longrightarrow \text{R-}^{13}\text{NH}_2 \dots$

高比放射能化

核種	理論値 (Ci/ μmol)	放医研達成値 (Ci/ μmol)	他施設最大達成値 (Ci/ μmol)
^{11}C	9000	200	10
^{13}N	19000	170	-
^{18}F	1700	220	50
^3H	0.029	-	-
^{14}C	0.00006	-	-

[^{11}C]Racloprideによる脳切片のARG画像

125 Ci/ μmol 2 Ci/ μmol 1 mCi/ μmol

