

Table 1 : R groups for the general structure of PPIs .

Compound	Brand names	Substituents					Form	First approval
		X	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>		
Omeprazole	Losec, Antra, Omepral, Prilosec	CH	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Racemate	1989 in USA
Esomeprazole	Nexium, Esotrex, pumpinox	CH	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	S-enantiomer of omeprazole	2001 in USA
Lansoprazole	Prevacid, Helicid, Zoton, Inhibitol	CH	H	CH <sub>3</sub>	CH <sub>2</sub> CF <sub>3</sub>	H	Racemate	1991 in Europe
Dexlansoprazole	Kapidex, Dexilant	CH	H	CH <sub>3</sub>	CH <sub>2</sub> CF <sub>3</sub>	H	R-enantiomer of lansoprazole	2009 in USA
Pantoprazole	Protonix, Somac, Pantec, Pantoloc	CH	OCHF <sub>2</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H	Racemate	1994 in Germany
Rabeprazole	Pariet, AcipHex, Zechin, Rabecid	CH	H	CH <sub>3</sub>	(CH <sub>2</sub> ) <sub>3</sub> OCH <sub>3</sub>	H	Racemate	1999 in USA
Tenatoprazole	Radicuto	N	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Racemate	—