

Comparison of oral drug formulations that deter or prevent misuse and abuse ¹⁻⁴

Product	Active Drug	Dosage Form	Manufacturer	Abuse-Deterrent Methods				Type of Technology
				Physical Barrier	Viscosity Management	Sequestered Opioid Antagonist	Aversive Agent	
Exalgo [®]	Hydromorphone HCl	ER tablet	Mallinckrodt Pharmaceuticals, Inc.	X	X			OROS
Nucynta [®] ER	Tapentadol	ER tablet	Janssen Pharmaceuticals, Inc.	X	X			Intac and PEO matrix
Opana [®] ER	Oxymorphone HCl	ER tablet	Endo Pharmaceuticals, Inc.	X	X			Intac and PEO matrix
Oxycontin [®]	Oxycodone HCl	CR tablet	Purdue Pharma, L.P.	X	X			HPMC and PEO matrix
Xartemis [®] XR	Oxycodone HCl and acetaminophen	ER tablet	Mallinckrodt Pharmaceuticals, Inc.		X			Acuform and PEO matrix
Embeda [®]	Morphine sulfate	ER capsule	King Pharmaceuticals, Inc. (a Pfizer co.)			X		Pellets of morphine surrounding an inner core of naltrexone
Suboxone [®]	Buprenorphine HCl	SL film	Reckitt Benckiser Pharmaceuticals, Inc.			X		Co-formulated with sequestered naloxone
Talwin [®] NX	Pentazocine HCl	IR tablet	Sanofi-Aventis LLC.			X		Co-formulated with sequestered naloxone
Targiniq [®] ER	Oxycodone HCl	ER tablet	Purdue Pharma, L.P.			X		Co-formulated with sequestered naloxone
Zubsolv [®]	Buprenorphine HCl	SL tablet	Orexo US, Inc.			X		Co-formulated with sequestered naloxone
Tussigon [®]	Hydrocodone bitartrate	IR tablet Oral syrup	Monarch Pharmaceuticals, Inc. (a Pfizer co.)				X	Co-formulated with homatropine methylbromide
Oxecta [®]	Oxycodone HCl	IR tablet	King Pharmaceuticals, Inc. (a Pfizer co.)		X		X	Aversion and PEO matrix
Remoxy [®]	Oxycodone HCl	ER capsule	Pain Therapeutics (a Durect Corporation co.)		X			ORADUR and SAIB matrix
Xtampza [®]	Oxycodone HCl	ER capsule	Collegium Pharmaceutical, Inc.	X	X			DeterRx
Hysingla [®] ER	Hydrocodone bitartrate	ER tablet	Purdue Pharma, L.P.	X	X			PEO matrix and HPC RESISTEC
Zohydro [®] ER	Hydrocodone bitartrate	ER capsule	Pernix Therapeutics, LLC.		X			PEO matrix BeadTek

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For questions and permissions, email Dr. Fudin to jeff@paindr.com / References on next page.

MS Contin®	Morphine sulfate	ER tablet	Purdue Pharma, L.P.					
Avinza®	Morphine sulfate	ER capsule	Purdue Pharma, L.P.				X	
Kadian®	Morphine sulfate	ER capsule	Actavis Pharma, Inc.				X	
OROS, Osmotic extended-Release Oral delivery System; PEO, polyethylene oxide; HPMC, hydroxypropyl methylcellulose; SAIB, sucrose acetate isobutyrate; HPC, hydroxypropyl cellulose								

References:

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4. Stanos SP, Bruckenthal P, Barkin RL. Strategies to reduce the tampering and subsequent abuse of long-acting opioids: potential risks and benefits of formulations with physical or pharmacologic deterrents to tampering. *Mayo Clinic proceedings*. Jul 2012;87(7):683-694.