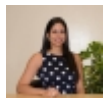


# Phosphodiesterase 4D inhibitors limit prostate cancer growth potential. <sup>[1]</sup>

Enviado por [Maribella Domenech](#) <sup>[2]</sup> el 30 junio 2015 - 9:01 am



<sup>[2]</sup>

Título	Phosphodiesterase 4D inhibitors limit prostate cancer growth potential.
Publication Type	Journal Article
Year of Publication	2015
Autores	<a href="#">Powers, GL</a> <sup>[3]</sup> , <a href="#">Frantskevich, K</a> <sup>[4]</sup> , <a href="#">Malinowski, RL</a> <sup>[5]</sup> , <a href="#">Bushman, W</a> <sup>[6]</sup> , <a href="#">Beebe, DJ</a> <sup>[7]</sup> , <a href="#">Marker, PC</a> <sup>[8]</sup>
Secondary Authors	<a href="#">Hammer, KDP</a> <sup>[9]</sup>
Tertiary Authors	<a href="#">Domenech, M</a> <sup>[10]</sup>
Journal	Mol Cancer Res
Volume	13
Issue	1
Pagination	149-60
Date Published	2015 Jan
ISSN	1557-3125

---

## Abstract

**UNLABELLED:** Phosphodiesterase 4D (PDE4D) has recently been implicated as a proliferation-promoting factor in prostate cancer and is overexpressed in human prostate carcinoma. However, the effects of PDE4D inhibition using pharmacologic inhibitors have not been examined in prostate cancer. These studies examined the effects of selective PDE4D inhibitors, NVP-ABE171 and cilomilast, as anti-prostate cancer therapies in both in vitro and in vivo models. The effects of PDE4D inhibitors on pathways that are critical in prostate cancer and/or downstream of cyclic AMP (cAMP) were examined. Both NVP-ABE171 and cilomilast decreased cell growth. In vitro, PDE4D inhibitors lead to decreased signaling of the sonic hedgehog (SHH), androgen receptor (AR), and MAPK pathways, but growth inhibition was best correlated to the SHH pathway. PDE4D inhibition also reduced proliferation of epithelial cells induced by paracrine signaling from cocultured stromal cells that had activated hedgehog signaling. In addition, PDE4D inhibitors decreased the weight of the prostate in wild-type mice. Prostate cancer xenografts grown in nude mice that were treated with cilomilast or NVP-ABE171 had decreased wet weight and increased apoptosis compared with vehicle-treated controls. These studies suggest the pharmacologic inhibition of PDE4D using small-molecule inhibitors is an effective option for prostate cancer therapy.

**IMPLICATIONS:** PDE4D inhibitors decrease the growth of prostate cancer cells in vivo and in vitro, and PDE4D inhibition has therapeutic potential in prostate cancer.

DOI [10.1158/1541-7786.MCR-14-0110](https://doi.org/10.1158/1541-7786.MCR-14-0110) <sup>[11]</sup>

Alternate Journal Mol. Cancer Res.

PubMed ID [25149359](https://pubmed.ncbi.nlm.nih.gov/25149359/) <sup>[12]</sup>

PubMed Central ID PMC4312503

Grant List [CA140217 / CA / NCI NIH HHS / United States](#)  
[CA141798 / CA / NCI NIH HHS / United States](#)  
[DK091193 / DK / NIDDK NIH HHS / United States](#)  
[R01 CA140217 / CA / NCI NIH HHS / United States](#)  
[R01 DK091193 / DK / NIDDK NIH HHS / United States](#)  
[T32 CA157322 / CA / NCI NIH HHS / United States](#)  
[T32 CA157322 / CA / NCI NIH HHS / United States](#)

Copyright © 2006-Presente CienciaPR y CAPRI, excepto donde sea indicado lo contrario, todos los derechos reservados

[Privacidad](#) | [Términos](#) | [Normas de la Comunidad](#) | [Sobre CienciaPR](#) | [Contáctenos](#)

**Source URL:** <https://www.cienciapr.org/es/phosphodiesterase-4d-inhibitors-limit-prostate-cancer-growth-potential>

## Links

- [1] <https://www.cienciapr.org/es/phosphodiesterase-4d-inhibitors-limit-prostate-cancer-growth-potential> [2]  
<https://www.cienciapr.org/es/user/maribelladomenech> [3]  
<https://www.cienciapr.org/es/biblio?f%5Bauthor%5D=8645> [4]  
<https://www.cienciapr.org/es/biblio?f%5Bauthor%5D=8648> [5]  
<https://www.cienciapr.org/es/biblio?f%5Bauthor%5D=8649> [6]  
<https://www.cienciapr.org/es/biblio?f%5Bauthor%5D=8650> [7]  
<https://www.cienciapr.org/es/biblio?f%5Bauthor%5D=8651> [8]  
<https://www.cienciapr.org/es/biblio?f%5Bauthor%5D=8652> [9]  
<https://www.cienciapr.org/es/biblio?f%5Bauthor%5D=8646> [10]  
<https://www.cienciapr.org/es/biblio?f%5Bauthor%5D=8647> [11] <http://dx.doi.org/10.1158/1541-7786.MCR-14-0110> [12] <https://www.ncbi.nlm.nih.gov/pubmed/25149359?dopt=Abstract>