

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549**

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): October 4, 2008

Sucampo Pharmaceuticals, Inc.

(Exact Name of Registrant as Specified in Charter)

Delaware

001-33609

13-3929237

(State or Other Juris-
diction of Incorporation)

(Commission
File Number)

(IRS Employer
Identification No.)

4520 East-West Highway, Suite 300
Bethesda, Maryland

20814

(Address of Principal Executive Offices)

(Zip Code)

Registrant's telephone number, including area code: (301) 961-3400

(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
 - Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
 - Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
 - Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))
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Item 8.01. Other Events.

On October 4, 2008, Sucampo Pharmaceuticals, Inc. delivered a scientific conference presentation at the 2nd World Conference on Magic Bullets (Ehrlich II) and American College of Gastroenterology that included written communication comprised of a presentation and poster. The presentation and poster at the 2nd World Conference on Magic Bullets (Ehrlich II) and American College of Gastroenterology are being furnished as Exhibits 99.1 and 99.2 to this Current Report on Form 8-K.

The information in this Item 8.01 and Exhibits 99.1 and 99.2 to this Form 8-K shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934 (the “Exchange Act”) or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933, as amended, or the Exchange Act, except as expressly set forth by specific reference in such a filing.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits

99.1 Presentation for the 2nd World Conference on Magic Bullets (Ehrlich II), dated October 4, 2008

99.2 Poster for American College of Gastroenterology, dated October 4, 2008

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

SUCAMPO PHARMACEUTICALS, INC.

Date: October 7, 2008

By: /s/ JAN SMILEK

Name: Jan Smilek

Title: VP, Finance and Acting Chief Financial Officer

PROSTONES AS CIC-2 Cl⁻ CHANNEL ACTIVATORS FOR TREATMENT OF DISEASES AND DISORDERS

**John Cuppoletti University of Cincinnati,
Cincinnati, OH**

and

**Ryuji Ueno, Sucampo Pharmaceuticals Inc.,
Bethesda, MD**

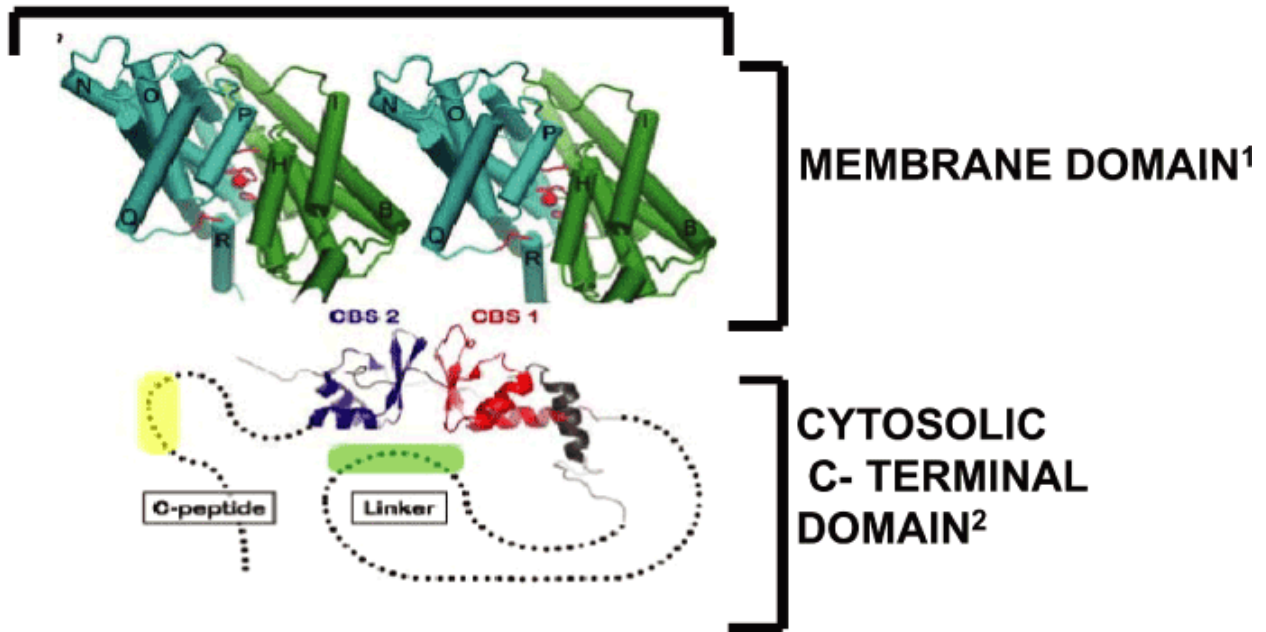


Prostones

- Prostones are derivatives of metabolites of prostaglandins.
 - Lubiprostone is a prostone which is used clinically to treat chronic idiopathic constipation and irritable bowel syndrome related to constipation (IBS-C).
 - Lubiprostone is a ClC-2 chloride channel activator which increases salt and water secretion in the intestine.
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CIC Cl⁻ CHANNEL IS THE TARGET FOR LUBIPROSTONE

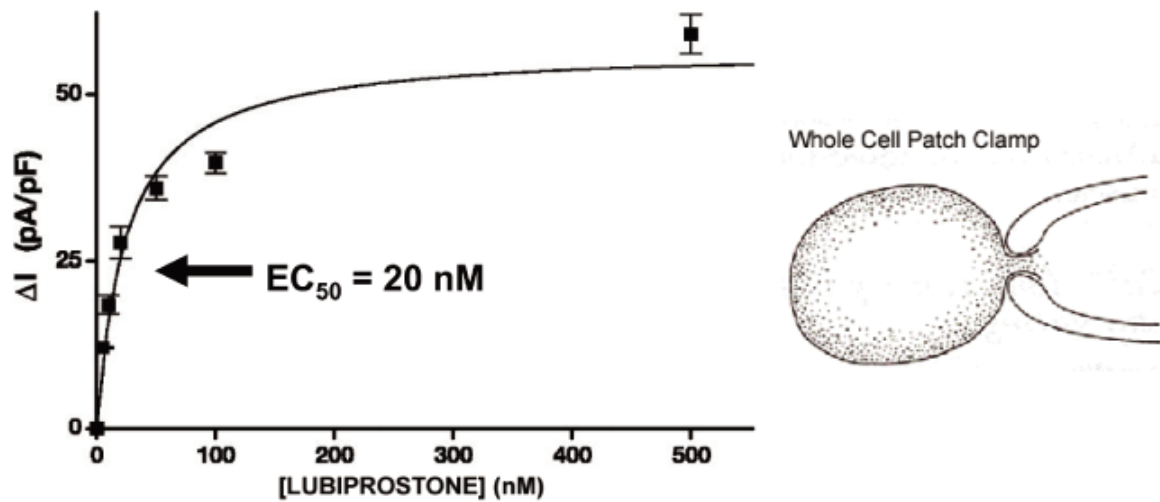
CIC Cl⁻ CHANNELS ARE DIMERS



¹R.Dutzler, E.B. Campbell, M. Cadene, B.T. Chait and R.MacKinnon *Nature* 415, 287-294(2002)

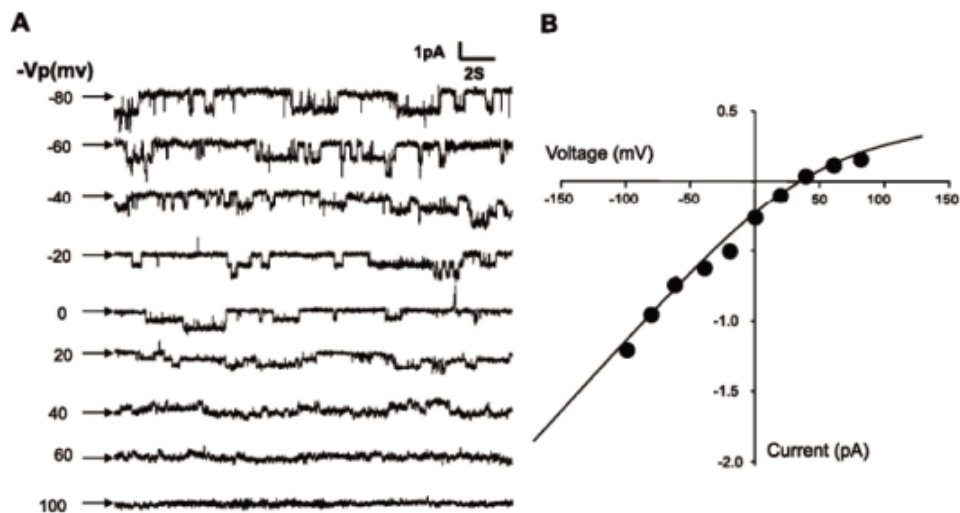
²S. Alioth, S. Meyer, R. Dutzler and K. Pervushin *Journal of Molecular Biology* Vol. 369, Issue 5, 22 June 2007, Pages 1163-1169

LUBIPROSTONE POTENTLY ACTIVATES RECOMBINANT HUMAN CIC-2 CHLORIDE CHANNELS STUDIED BY WHOLE CELL PATCH CLAMP



Cuppoletti, J. et al. Am J Physiol Cell Physiol 287: C1173-C1183 2004

LUBIPROSTONE ACTIVATES RECOMBINANT HUMAN CIC-2 Cl⁻ CHANNELS IN HEK293 CELLS AT SINGLE CHANNEL LEVEL RECORDED BY PATCH CLAMP

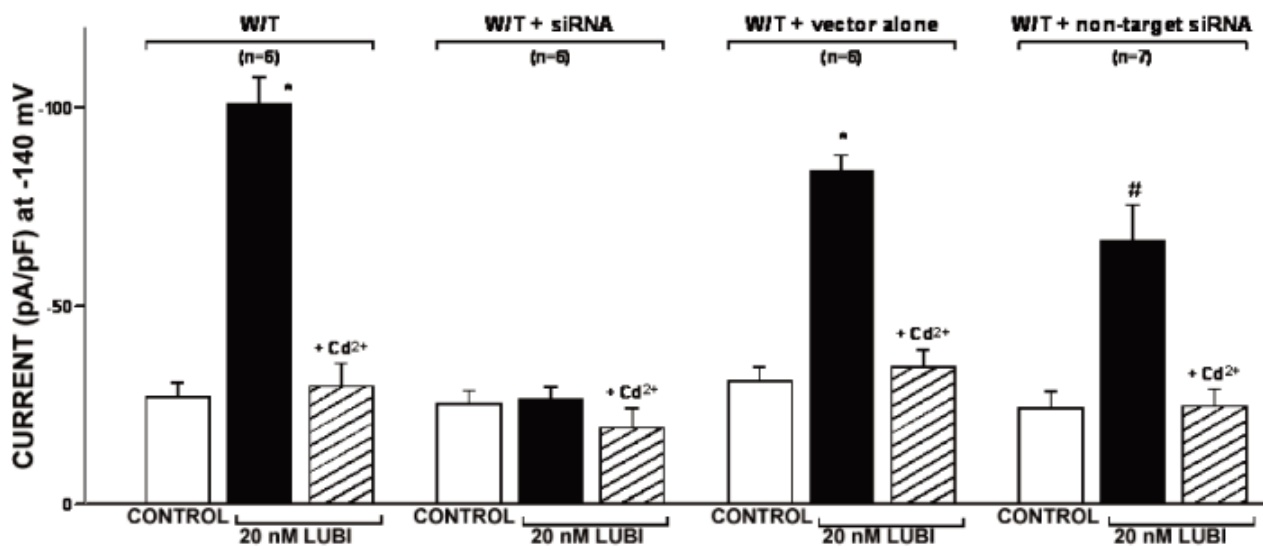


Bao, H. F. et al. Am J Physiol Gastrointest Liver Physiol 295: G234-G251 2008

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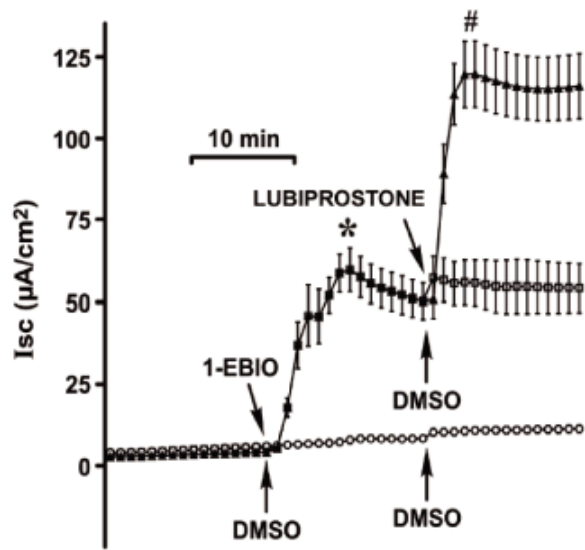
**AJP - Gastrointestinal
and Liver Physiology**

siRNA TO CIC-2 ABLATES LUBIPROSTONE ACTIVATION OF CHLORIDE TRANSPORT BY RECOMBINANT HUMAN CIC-2 IN HEK293 CELLS

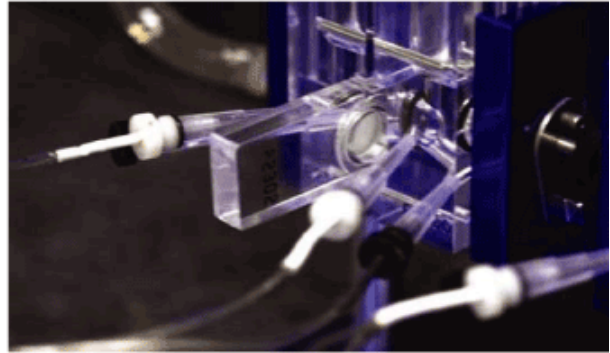


Cuppoletti J, Malinowska DH, Tewari K, Chakrabarti J, Ueno R. *Gastroenterology*. Vol. 134, Issue: 4, April, 2008. pp. A-582

LUBIPROSTONE ACTIVATES Cl⁻ TRANSPORT IN T84 INTESTINAL CELL CULTURES STUDIED BY SHORT CIRCUIT CURRENT WITH USSING CHAMBERS

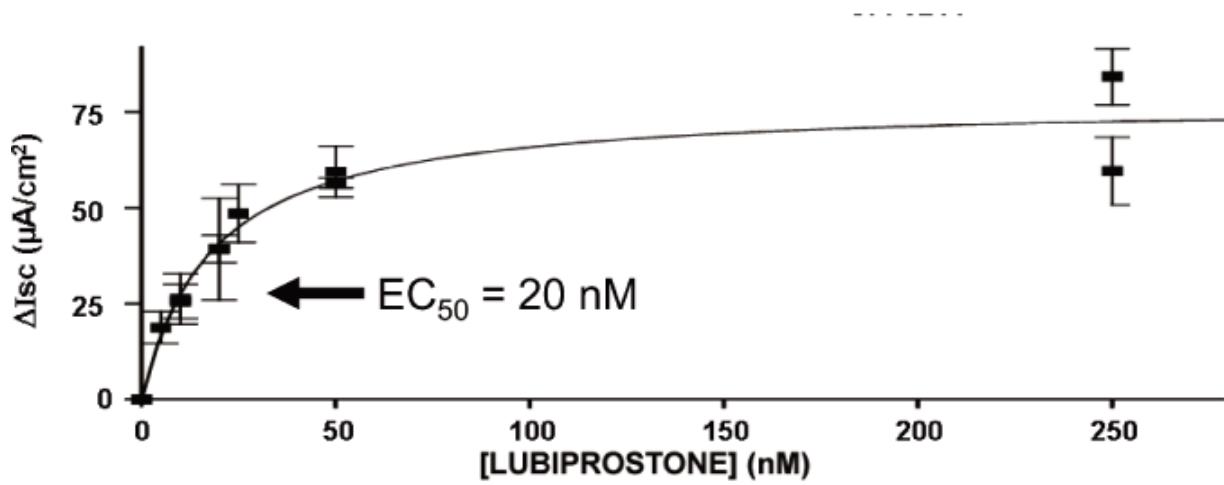


USSING CHAMBER



Cuppoletti, J. et al. *Am J Physiol Cell Physiol* 287: C1173-C1183 2004

LUBIPROSTONE POTENTLY STIMULATES Cl^- TRANSPORT IN T84 INTESTINAL CELLS

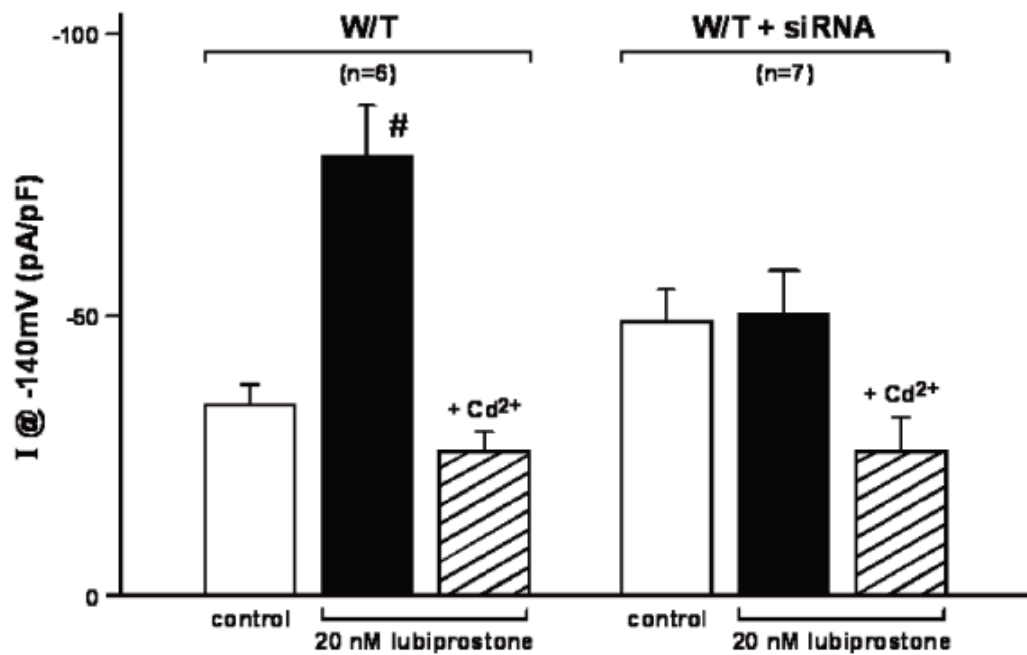


Cuppoletti, J. et al. Am J Physiol Cell Physiol 287: C1173-C1183 2004

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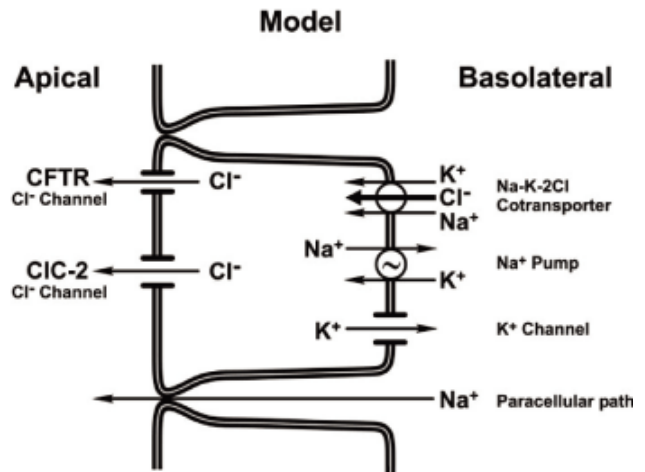
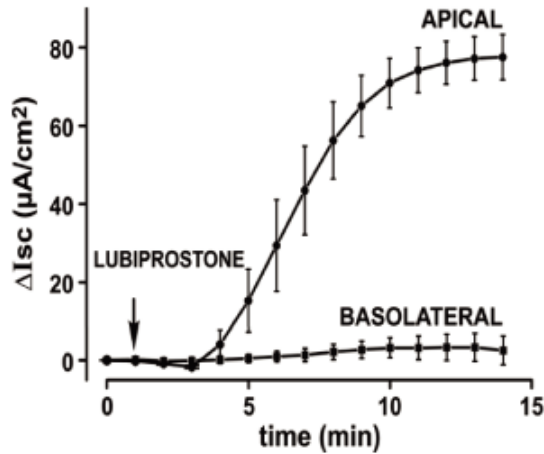
AJP - Cell Physiology

siRNA TO CIC-2 ABLATES STIMULATION OF Cl⁻ TRANSPORT BY LUBIPROSTONE IN T84 CELLS



Cuppoletti J, Malinowska DH, Tewari K, Chakrabarti J, Ueno R. *Gastroenterology*, Vol. 134, Issue: 4, April, 2008. pp. A-582

CIC-2 IS EXPRESSED ON THE APICAL MEMBRANE AS SHOWN USING NYSTATIN SOLUBILIZATION OF APICAL OR BASOLATERAL MEMBRANE

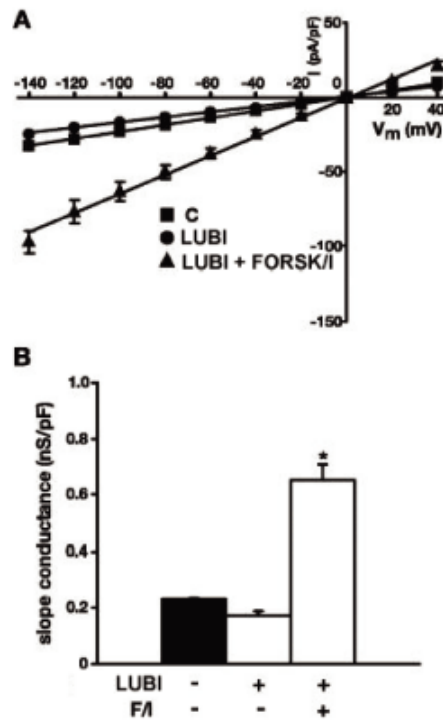


Cuppoletti, J. et al. *Am J Physiol Cell Physiol* 287: C1173-C1183 2004

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AJP - Cell Physiology

LUBIPROSTONE DOES NOT STIMULATE Cl⁻ TRANSPORT BY CFTR

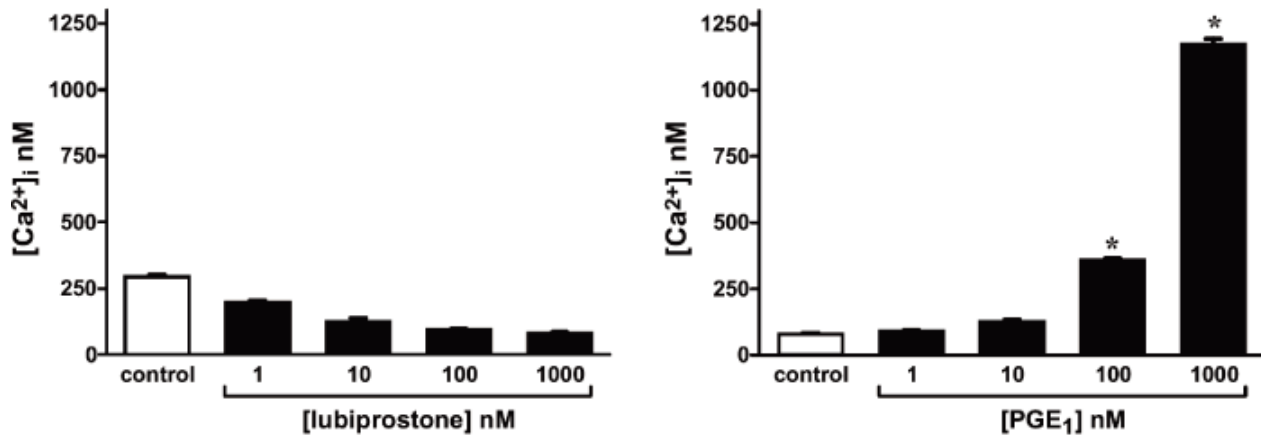


Cuppoletti, J. et al. Am J Physiol Cell Physiol 287: C1173-C1183 2004

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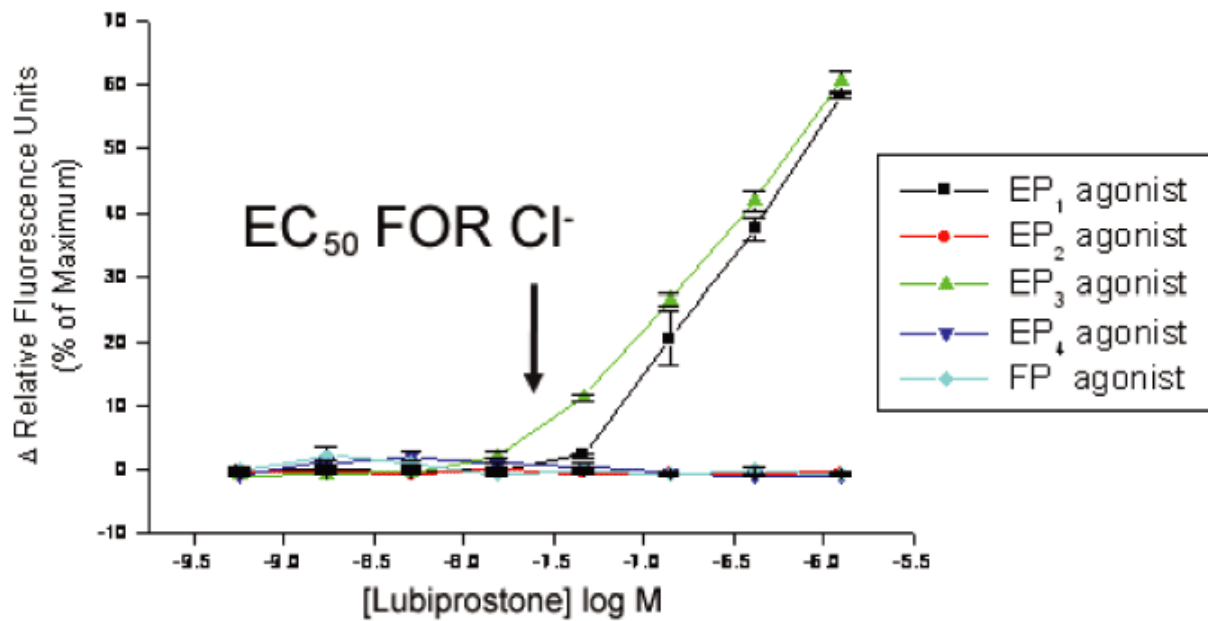
AJP - Cell Physiology

LUBIPROSTONE DOES NOT ACT THROUGH INCREASES IN INTRACELLULAR CALCIUM



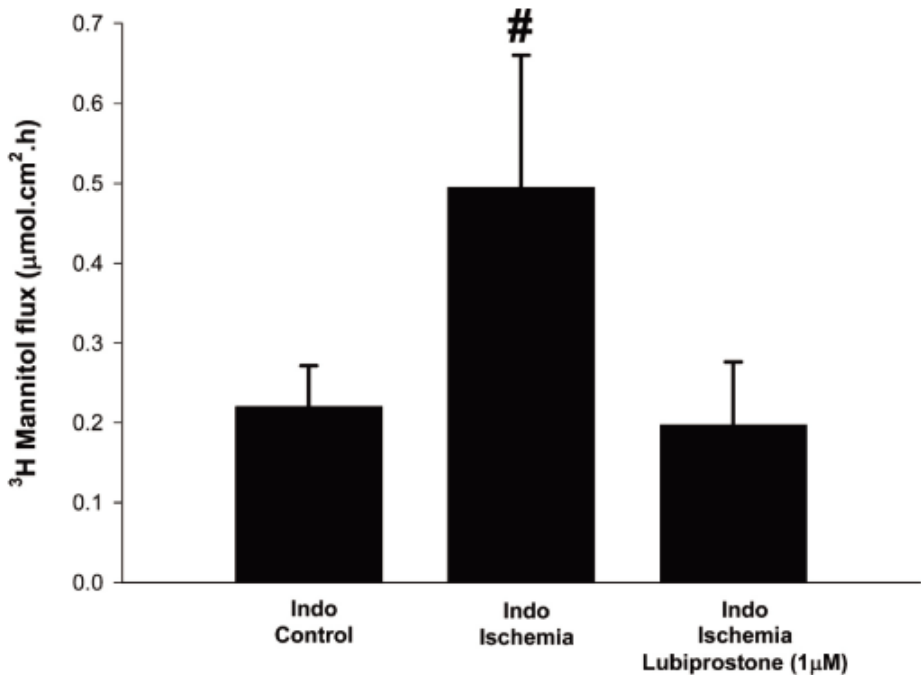
Cuppoletti J, Malinowska DH, Tewari K, Chakrabarti J, Ueno R. *Gastroenterology*, Vol. 134, Issue: 4, April, 2008. pp. A581-A-582

LUBIPROSTONE DOES NOT ACTIVATE Cl⁻ TRANSPORT THROUGH EP OR FP RECEPTORS



J.Cuppoletti, D.H.Malinowska, R.Ueno. ACG meeting, Orlando, FL October 5, 2008

LUBIPROSTONE PROMOTES REPAIR OF BARRIER FUNCTION AFTER DAMAGE BY INDOMETHACIN AND ISCHEMIA



Moeser, A. J. et al. Am J Physiol Gastrointest Liver Physiol 292: G647-G656 2007;

SUMMARY OF LUBIPROSTONE MECHANISMS OF ACTION

- LUBIPROSTONE TARGETS CIC-2 CHLORIDE CHANNELS IN THE INTESTINE AS SHOWN BY WHOLE CELL CURRENTS, SINGLE CHANNELS AND SHORT CIRCUIT CURRENT.
 - LUBIPROSTONE POTENTLY ACTIVATES CIC-2 CHLORIDE CHANNELS
 - LUBIPROSTONE DOES NOT AFFECT OTHER INTESTINAL CHLORIDE CHANNELS
 - THE SITE OF ACTION OF LUBIPROSTONE IS THE APICAL MEMBRANE
 - LUBIPROSTONE DOES NOT ACT THROUGH EP- OR FP-RECEPTORS, INCREASES IN cAMP, OR INCREASED CALCIUM
 - LUBIPROSTONE INCREASES SALT AND WATER SECRETION IN INTESTINAL CELLS AND THIS IS THE BASIS FOR CLINICAL ACTION IN CONSTIPATION
 - LUBIPROSTONE PROMOTES REPAIR OF EPITHELIAL BARRIERS AND THIS MAY CONTRIBUTE TO CLINICAL ACTION IN IBS-C
-

ACKNOWLEDGEMENT

- THESE STUDIES WERE SUPPORTED BY A GRANT FROM SUCAMPO PHARMACEUTICALS, INC., BETHESDA MD, USA



Prostaglandin Receptor Activation Properties of Lubiprostone

J. Caspary, D.S. Malinszky, R. Liang,
Molecular and Cellular Physiology, University of Cincinnati, Cincinnati, OH; Schering-Plough Pharmaceuticals, Inc., Kenilworth, NJ

Introduction

Lubiprostone is used clinically to treat chronic idiopathic constipation and initiate bowel syndrome with constipation. It is a prostone (derived from mesolobolone of prostaglandin that activates $ClC-2$ Cl^- channels with an EC_{50} of 20 nM) and increases intestinal fluid secretion. In the present study, the agonist and antagonist activity of the EP₁, EP₂, EP₃, EP₄, EP₆, and FP receptors was determined using a calcium imaging assay in the EC₁₀ for allosteric binding to these specific receptors. This induces the need to use either EP₁ receptor antagonist or complex biological processes such as contraction to infer binding of lubiprostone to prostaglandin receptors.

Purpose

The aim of the present study was to determine the activities of lubiprostone on recombinant prostaglandin receptors.

Methods

Lubiprostone binding to recombinant EP₁, EP₂, EP₃, EP₄, EP₆ and FP receptors was assessed by Malinko Corporation (Noblesse, Denver, CO), using GreenScreen calcium imaging. Lubiprostone (100 nM) was added to the cells and the cells were transfected with cDNA containing either full-length human EP₁, EP₂, EP₃, EP₄, EP₆ or FP receptors. Triplicate assays of lubiprostone effects were carried out with PGE₂ or PGE₁ as a positive control. In all cases, the readout was relative fluorescence units related to $[Ca^{2+}]_i$ through calcium release activated calcium ion channel (CRAC) measured by Fluo-4 relative fluorescence. To measure antagonist effects of lubiprostone, cells with cloned human receptors were first stimulated with either PGE₂ or PGE₁ to give about 60% of the maximum response and then lubiprostone was added.

Results

Positive controls: Measured agonist activity of PGE₂ on EP₁, EP₂, EP₃, EP₄ and EP₆ receptor-expressing cells generated EC₅₀ values of 7.46, 48.62, 3.66 and 31.18 nM of 3.49 nM. Agonist activity of PGE₁ on FP receptor-expressing cells gave an EC₅₀ of 3.49 nM.

Lubiprostone exhibited no agonist effects on cloned EP₁, EP₂, EP₃, EP₄ or FP receptors (Figure 1). Lubiprostone did not demonstrate any detectable antagonist effects on EP₁ or FP receptors (Figure 2). However, there was weak antagonist effect of lubiprostone on EP₂ receptors (EC₅₀ = 277 nM).

Figure 1. Agonist Effect of Lubiprostone on Cloned EP and FP Receptors

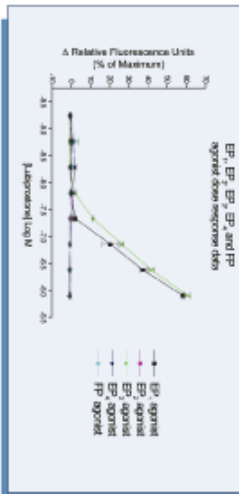


Figure 2. Antagonist Effect of Lubiprostone on Cloned EP and FP Receptors

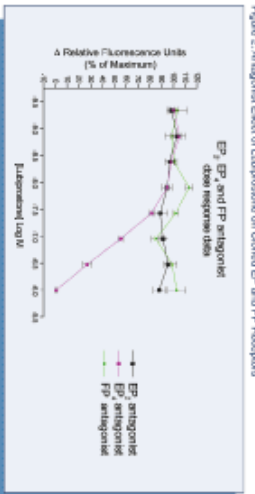


Figure 3. Dose response curve for antagonist activity of lubiprostone on cloned human EP1, EP2, and FP receptors expressed in cultured cells. Data represent the mean ± SE of 3 observations.

Summary

It has been shown in the present study that lubiprostone does not act as an agonist on cloned human EP₁, EP₂, or FP receptors. The lack of agonist activity of lubiprostone on cloned human EP₁, EP₂, or FP receptors indicates that lubiprostone reduces electrically stimulated neural contractions in rat and human colon circular muscle (EM) an EC₅₀ of approximately 20 nM. This finding is consistent with the known mechanism of action of lubiprostone and implies that these reported effects are not due to EP₁ receptor occupation by lubiprostone.

Agonist activity of lubiprostone on cloned EP₂ was very low with an EC₅₀ of 270 nM, a value 44 times higher than for ROE₂ on the EP₂ receptor. Moreover, this concentration is approximately 15 times higher than the EC₅₀ for lubiprostone for activation of $ClC-2$ chloride channels. Lubiprostone remains mostly in the lumen of the gut and does not enter the circulation. This means that lubiprostone will not reach sufficiently high concentrations to activate EP₂ receptors in the smooth muscle layer. Since EP₂ antagonists do not affect the PGE₂ effects on the vagus nerve, lubiprostone is unlikely to act on the stomach through EP₂ (or other EP₁ or EP₂ receptors) to affect vagus nerve stimulation. This study confirms the pharmacological mechanism of action of lubiprostone and demonstrates that lubiprostone does not have pharmacologically relevant activity on prostaglandin receptors.

Conclusions

As clinically relevant doses, lubiprostone is unlikely to have significant PG receptor activity. The effects of lubiprostone on the gut are mediated by $ClC-2$ channels and not by the activation of EP₁ or FP receptors.

References

1. Review package (New) [eparade, NDA 202697-01] Schering-Plough Pharmaceuticals, Inc., 2006
2. Malinszky DS, Caspary J, Liang R, et al. Lubiprostone, a novel $ClC-2$ activator, is a potent stimulant of intestinal fluid secretion. *J Pharmacol Exp Ther* 2004; 309: 1011-1018.
3. Malinszky DS, Caspary J, Liang R, et al. Lubiprostone, a novel $ClC-2$ activator, is a potent stimulant of intestinal fluid secretion. *J Pharmacol Exp Ther* 2004; 309: 1011-1018.
4. Bapatkar D, et al. Lubiprostone, a novel $ClC-2$ activator, is a potent stimulant of intestinal fluid secretion. *J Pharmacol Exp Ther* 2004; 309: 1011-1018.
5. Bapatkar D, et al. Lubiprostone, a novel $ClC-2$ activator, is a potent stimulant of intestinal fluid secretion. *J Pharmacol Exp Ther* 2004; 309: 1011-1018.
6. Bapatkar D, et al. Lubiprostone, a novel $ClC-2$ activator, is a potent stimulant of intestinal fluid secretion. *J Pharmacol Exp Ther* 2004; 309: 1011-1018.
7. Bapatkar D, et al. Lubiprostone, a novel $ClC-2$ activator, is a potent stimulant of intestinal fluid secretion. *J Pharmacol Exp Ther* 2004; 309: 1011-1018.
8. Bapatkar D, et al. Lubiprostone, a novel $ClC-2$ activator, is a potent stimulant of intestinal fluid secretion. *J Pharmacol Exp Ther* 2004; 309: 1011-1018.
9. Bapatkar D, et al. Lubiprostone, a novel $ClC-2$ activator, is a potent stimulant of intestinal fluid secretion. *J Pharmacol Exp Ther* 2004; 309: 1011-1018.
10. Bapatkar D, et al. Lubiprostone, a novel $ClC-2$ activator, is a potent stimulant of intestinal fluid secretion. *J Pharmacol Exp Ther* 2004; 309: 1011-1018.

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