

 PEPID

PGx

# Precision Medicine **IS HERE**



**25+**

Years  
Experience



**159**

Countries



**1,000+**

Institutions



**30+**

Strategic and  
Editorial Partners



“

As we celebrate our 25th year in 2019, I can't help but reflect on the tremendous growth I've personally witnessed PEPID achieve. For nearly 2 decades, I've watched PEPID serve as a vital resource for tens of thousands of clinicians and healthcare facilities across the globe. In today's era of big data and rapidly-evolving market and cost trends, PEPID continues to play a critical role in meeting patient outcome and quality measurement objectives that ensure elevated standards of care and safety.

To stay at the forefront of this ever-evolving space, I'm proud to introduce one of the most cutting-edge clinical resources available on the market today: **PEPID PGx** – a predictive pharmacogenomic reference and interoperable repository for drug-drug and drug-gene interactions, cleverly designed to combine superior usability with actionable information.

I am especially excited to launch such a one-of-a-kind clinical tool that directly addresses the costly epidemic of adverse drug reactions, an all-too-common driver of medical costs and preventable morbidity and mortality worldwide. It is my greatest hope that through **PEPID PGx**, your clinical practice or institution can reinvigorate the focus on patient-centered care, leading to *safer medication administration, more personalized treatments, and improved patient outcomes*.

Since 1994, PEPID has consistently developed innovative clinical solutions. Today as we stand at the cusp of a true healthcare revolution, we will continue to create even bigger opportunities, redefine standards and, through our valued partners, impact countless lives for the better. The possibilities and challenges ahead are endless, and PEPID is – as we've always been – poised to take them head on.

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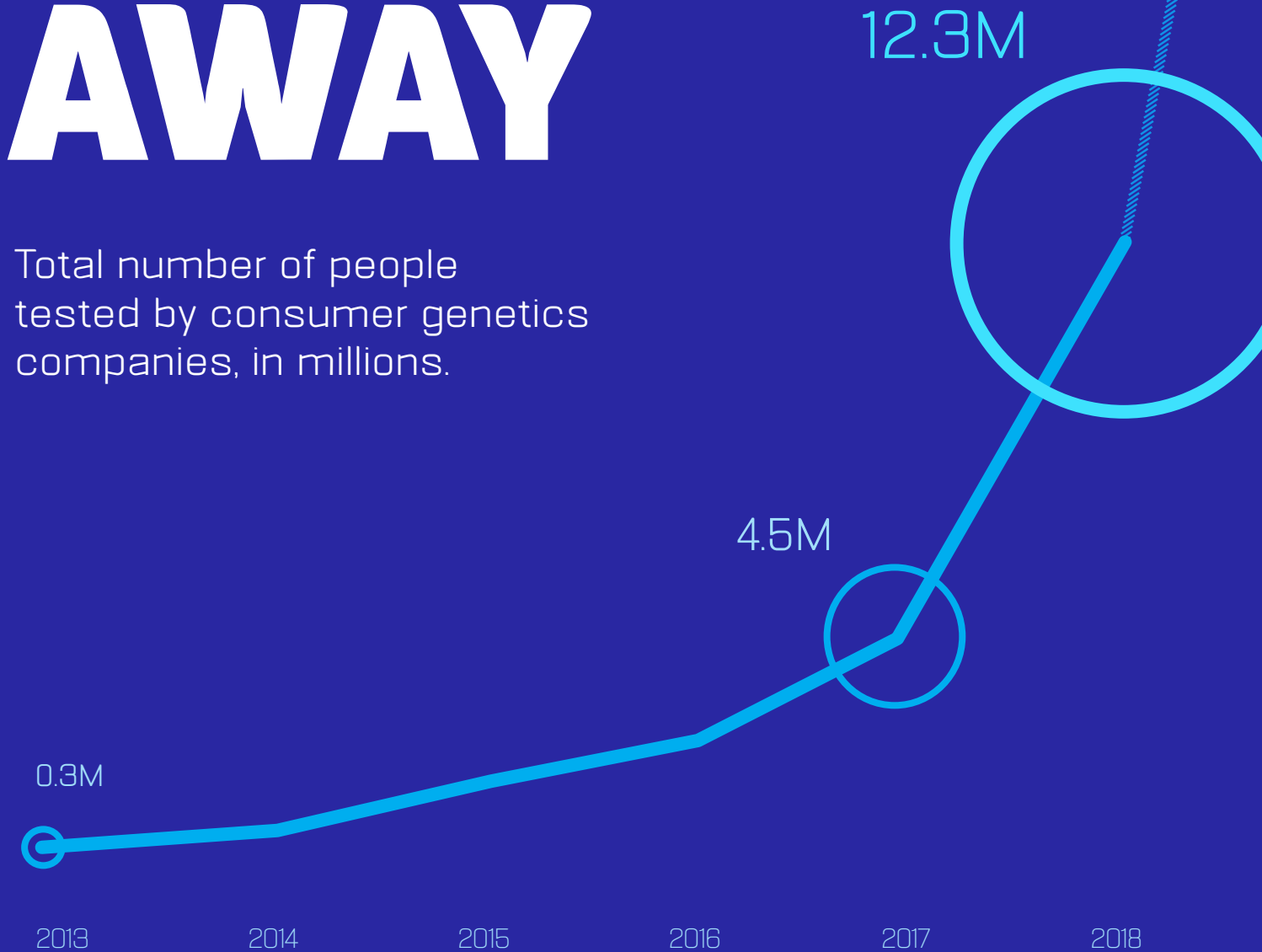


Sincerely,

**John C. Wagner**  
President, PEPID

# UP, UP, AND AWAY

Total number of people tested by consumer genetics companies, in millions.



source: ISOGG, Leah Larkin company reports.

**63%** of direct-to-consumer personal genomic testing consumers plan to share their genomic results with a Primary Care Physician.  
–National Institutes of Health

**4<sup>th</sup>** leading cause of death in US is adverse drug reactions

**75%** of PGx treatments are more cost-saving and cost-effective

**\$30.1B** is spent by health providers each year on preventable ADRs and readmissions

Van, C. H., Carere, D. A., Maitland-van, A. H., Ruffin, 4 T., Roberts, J. S., Green, R. C., & Impact, G. R. (2016, April 19). Consumer Perceptions of Interactions With Primary Care Providers After Direct-to-Consumer Personal Genomic Testing. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/26928821>

[www.ncbi.nlm.nih.gov/pmc/articles/PMC5637230/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC5637230/)

# PEPID PG<sub>x</sub> UNLOCKING THE POTENTIAL

Returns over 1,000,000 drug-gene interaction monographs.

Superior usability reduces clicks and time to answer.

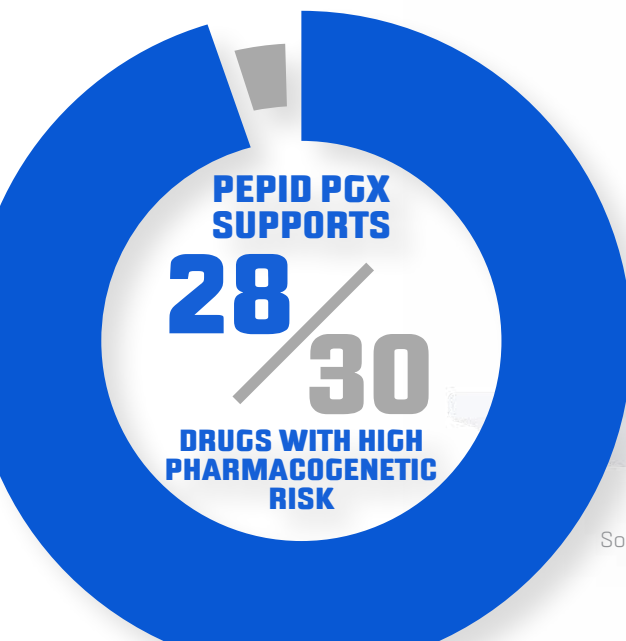
Returns condensed report of immediately actionable items.

The only true predictive pharmacogenomic tool available.

Built on the same platform as PEPID's Drug Interaction Checker, allowing for prescriptions, OTCs, herbals, nutraceuticals, lifestyle factors, and gene variations to all be checked simultaneously.

## Genes and Enzymes in PEPID PG<sub>x</sub>

CYP1A2	MTHFR A1298C
CYP2B6	MTHFR C677T
CYP2C19	OATP1B1
CYP2C8	OPRM1
CYP2C9/10	VKORC1
CYP2D6	APOE
CYP2E1	ANKK1
CYP3A4/5	COMTV158M
F2	F5



Predictive PG<sub>x</sub> results identify ADRs before they happen

Instantly check new treatments against patient record

Easily locate patient records

Patient profiles and med lists synced from existing records

View lab results synced from external lab or entered manually

Reference PEPID's comprehensive drug database

Shareable interaction monographs

The screenshot displays the PEPID PG<sub>x</sub> web application. The top navigation bar includes the PEPID logo, a patient dropdown menu for 'Poly Farneson', and buttons for 'Profile', 'Med List', and 'Labs'. A search bar is present for finding drugs, diseases, or labs. The main content area is split into two columns. The left column, titled 'Drug Interactions Checker', shows a list of 'Selected Drugs' (Omeprazole, Paclitaxel, Plavix) and a list of 'Interactions (19)' with various warning icons and descriptions. The right column, titled 'Pharmacogenomics Interaction Monograph', provides detailed information for a specific interaction: Omeprazole (Drug) and CYP2C19 (Gene). It includes a mechanism of action (Omeprazole is metabolized by CYP2C19), genetic phenotype information (CYP2C19 genetic testing indicates ?Ultrarapid Metabolizer? (genotype)), and clinical effects (levels of this active drug likely decreased). It also lists actions such as increasing dosing by 100-200% and monitoring levels. The monograph includes a strength of recommendation (Level 1) and a level of concern (Level 5), along with references to FDA monographs and clinical guidelines.

Immediately actionable information on pharmacogenetic, pharmacokinetic, and pharmacodynamic interactions

# MOVING FROM DATA TO DECISIONS

PEPID PGx is backed by the PEPID Drug Database, combining information on over 100,000 drug products, trade names and generics, herbals and nutraceuticals, and more into a single interface that provides all the information clinicians need to immediately optimize patient treatments.

## Alternative Dosing

**Pharmacogenomics Interaction Monograph**

**Pharmacogenomic Interaction**

DRUG: OMEPRAZOLE  
GENE: CYP2C19

↓ OMEPRAZOLE / CYP2C19 SOR1

**Mechanism**

- OMEPRAZOLE is metabolized by CYP2C19

**Genetic Phenotype**

- CYP2C19 Genetic testing indicates Ultrarapid Metabolizer (genotype)

**Effect**

- Levels of this active drug likely decreased

**Action**

- Increase dosing by 100-200% may be necessary
- Monitor levels/effects for dosing adjustments

**Subsections**

- Adult Dosing
- Pediatric Dosing
- Contraindications
- Indications
- Mechanism of Action
- Adverse Drug Rxns
- Kinetics/Dynamics
- Overdose Mgmt
- Interactions
- Trade Names
- Other Info
- Evidence-Based Inq
- References

**Omeprazole**

OMEPRAZOLE

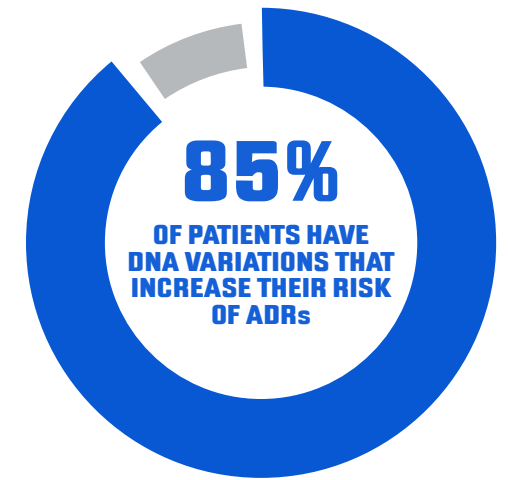
**Adult Dosing**

- Duodenal ulcer:
  - 20 mg PO qD x4 weeks
  - May administer additional 4 weeks if unresolved
- H. pylori infection (x10 days):
  - 20 mg PO BID with Amoxicillin 1000 mg PO BID, AND clarithromycin 500 mg PO BID
  - If ulcer: continue omeprazole additional 18 days
  - OR x14 days:
    - 40 mg PO qD, with clarithromycin 500 mg PO TID
    - If ulcer: continue omeprazole additional 14 days
- Gastric ulcer:
  - 40 mg PO qD x4-8 weeks
- GERD:
  - 20 mg PO qD, NMT 4 weeks
  - Erosive esophagitis, treatment:
    - 20 mg PO qD x4-8 weeks
    - May administer additional 4 weeks if unresolved
    - May administer additional 4-8 weeks if reoccurs
  - Erosive esophagitis, maintenance:
    - 20 mg PO qD, NMT 12 months
    - Dose modifications:
      - Hepatic impairment: 10 mg PO qD
      - Asian ethnicity: 10 mg PO qD
      - Safety and efficacy for maintenance Tx >1 year not established
  - Hypersecretory condition:
    - Initial: 60 mg PO qD

Interaction monographs are embedded with in-depth content for relevant drugs and genes.

Delve into monographs, using Quick Links to rapidly access relevant sections.

# ACTING ON PGx RESULTS TO IMPROVE PATIENT CARE



**Omeprazole**

OMEPRAZOLE

**Adult Dosing**

- Duodenal ulcer:
  - 20 mg PO qD x4 weeks
  - May administer additional 4 weeks if unresolved
- H. pylori infection (x10 days):
  - 20 mg PO BID with Amoxicillin 1000 mg PO BID, AND clarithromycin 500 mg PO BID
  - If ulcer: continue omeprazole additional 18 days
  - OR x14 days:
    - 40 mg PO qD, with clarithromycin 500 mg PO TID
    - If ulcer: continue omeprazole additional 14 days
- Gastric ulcer:
  - 40 mg PO qD x4-8 weeks
- GERD:
  - 20 mg PO qD; NMT 4 weeks
- Erosive esophagitis, treatment:
  - 20 mg PO qD x4-8 weeks
  - May administer additional 4 weeks if unresolved

Reveal comprehensive yet action-oriented monographs that include dosing information by selecting a linked drug or gene.

**Dosing Calculator**

**Omeprazole**

Selected Dose: 20 mg

Concentration: 10 mg/tab

Unit Dose: 20 10 mg/tab

Amount to give: 40 mg/tab

Use a prepopulated dosing calculator by selecting a linked dose. Choose from standard drug concentrations to determine an alternative dose.

## Evaluate Alternative Treatments

↓ OMEPRAZOLE / CYP2C19 SOR1

**Mechanism**

- OMEPRAZOLE is metabolized by CYP2C19

**Genetic Phenotype**

- CYP2C19 Genetic testing indicates Ultrarapid Metabolizer (genotype)

**Effect**

- Levels of this active drug likely decreased

**Action**

- Increase dosing by 100-200% may be necessary
- Monitor levels/effects for dosing adjustments
- Alternative drug strongly recommended.
- Alternative drugs to consider:
  - REVAPRAZAN
  - Acid, Ulcer, Dyspepsia

View each interaction's general warnings before considering alternative treatments. Alternative drugs to consider are listed under Actions.

**Drug Interactions Checker**

REVAPRAZA

REVAPRAZAN

Revatio

Revcovi

REVEFENACIN INHALED

Revelplac

Revex

Revlimid

Revolade

Rexulti

Reyataz

Add the possible alternate drug to the PGx checker to verify if other interactions may exist. Alternatively, select the drug class to view a complete list of possible alternative drugs.

**Potential Alternatives for RABEPRAZOLE**

**Acid, Ulcer, and Dyspepsia**

**Antacids**

- Aluminum Hydroxide/Magnesium Hydroxide
- Aluminum/Magnesium Hydroxide
- Calcium Carbonate
- Sodium Bicarbonate Combos

**H<sub>2</sub> Antagonists**

- Cimetidine
- Famotidine
- Nizatidine
- Ranitidine
- Ranitidine Bismuth Citrate

**Prostaglandins**

- Misoprostol (Cytotec)

**Proton Pump Inhibitors**

- Dexlansoprazole
- Esomeprazole
- Lansoprazole
- Omeprazole
- Omeprazole/sodium bicarbonate
- Pantoprazole
- Rabeprazole
- Rabeprazole

**Antiflatulents**

- Simethicone

**Prokinetic Agents**

- Cisapride

When viewing the drug class list, hover over each alternative to run an instant, focused PGx check.

**Drug Interactions Checker**

add a drug, OTC, herbal, etc

Selected Drugs: RABEPRAZOLE, PACLITAXEL, Plavix, OMEPRAZOLE

Interactions (35)

Rabeprazole

**Adult Dosing**

- GERD, healing:
  - 20 mg PO qD x4-8 weeks
  - Additional 8 weeks may be necessary
- GERD, maintenance of healing:
  - 20 mg PO qD for up to 12 week
- GERD, symptomatic:
  - 20 mg PO qD for up to 4 weeks
  - Additional course may be necessary
- Duodenal ulcer, healing:
  - 20 mg PO qD after morning meal
  - May require additional Tx to act
- Pathological hypersecretory condition:
  - 60 mg PO qD
  - May require divided doses
- Zollinger-Ellison syndrome:
  - 100 mg PO qD or 60 mg PO BID
  - May require Tx for up to 1 year
- H. pylori:
  - 20 mg PO BID with morning and evening meal
  - Amoxicillin: 1000 mg PO BID
  - Clarithromycin: 500 mg PO BID
  - Compliance to regimen of therapy
- Missed doses:
  - Administer ASAP unless close to next dose
  - Do not double doses
- Administration:
  - Administer tablet whole; do not crush
  - Administer without regard to food

**Pediatric Dosing**

After finding a preferred alternative, selecting a drug on the drug class list prompts an automatic swap in the PGx checker and presents the new drug's monograph.



Answers That  
Empower Action

**1.888.321.7828**

**PEPID.COM | PGX@PEPID.COM**