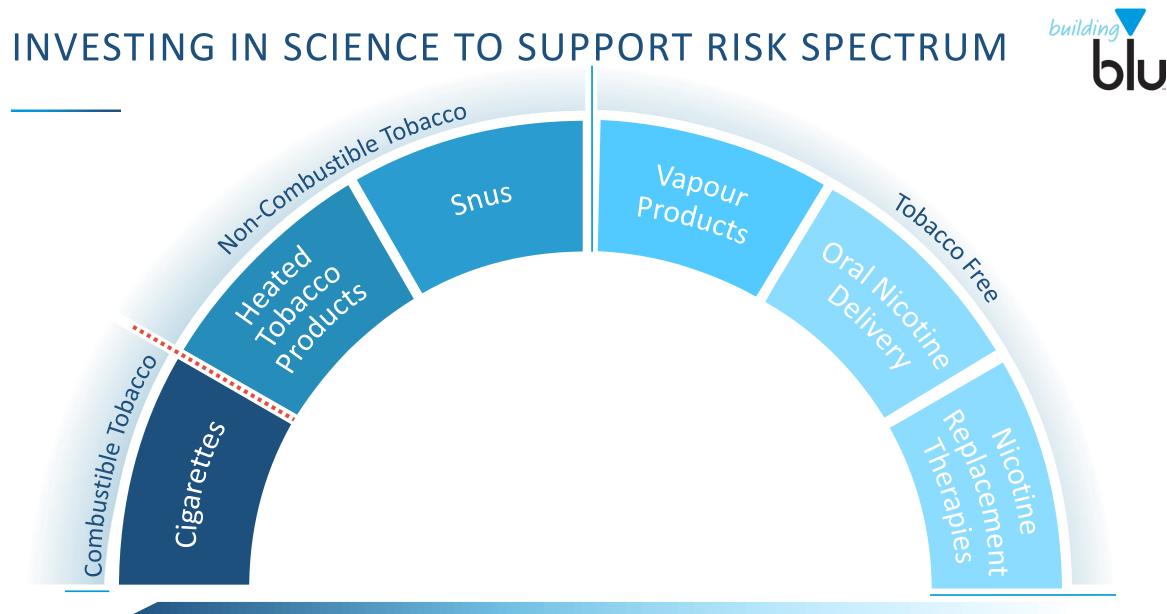


building building

HARM REDUCTION SCIENCE

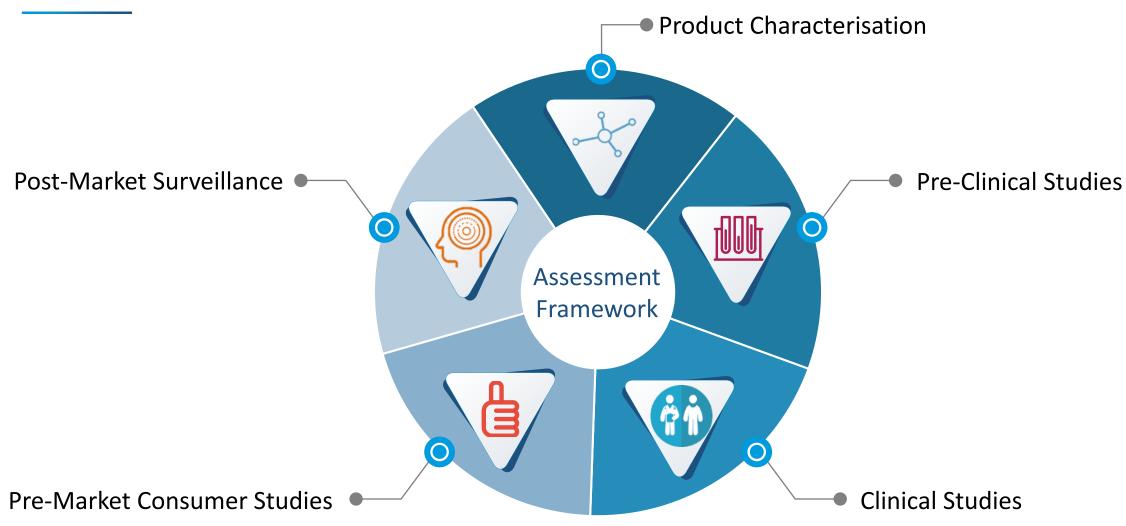
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Level of Toxicants

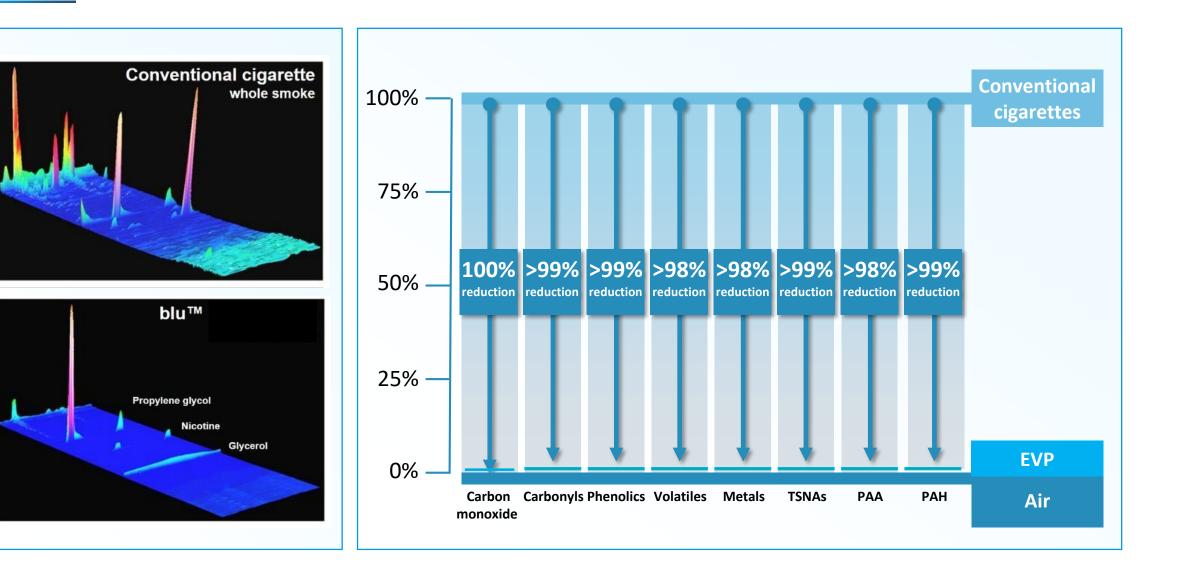
FRAMEWORK TO SUBSTANTIATE HARM REDUCTION POTENTIAL





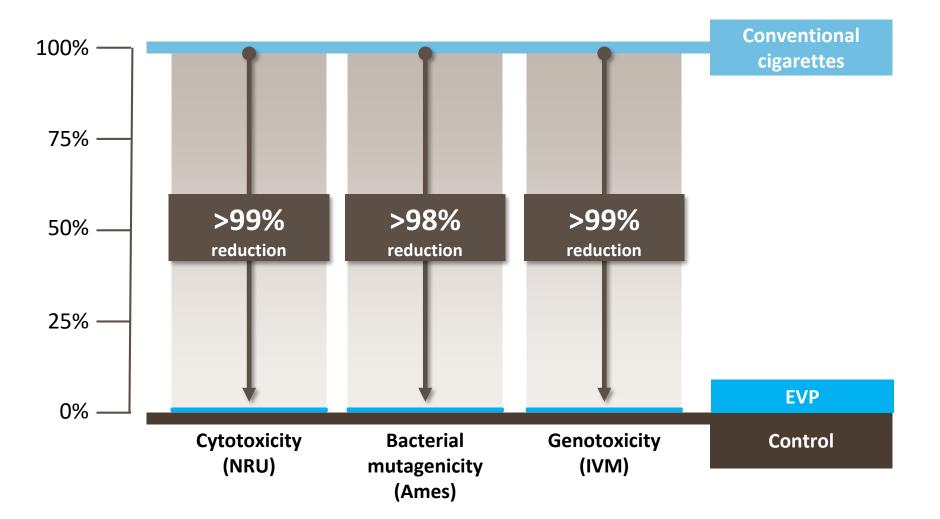














IN VITRO PRE-CLINICAL STUDIES PROVIDE A WEIGHT-OF-EVIDENCE APPROACH TO ASSESSING LONG-TERM HEALTH RISKS



2 years in to 5 year research toxicology program





IN VITRO PRE-CLINICAL STUDIES PROVIDE A WEIGHT-OF-EVIDENCE APPROACH



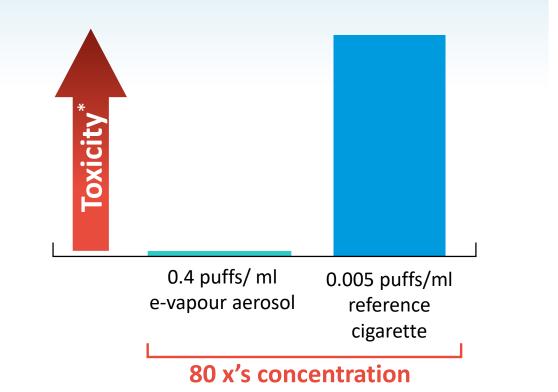
myblu did not elicit cell death, oxidative stress or inflammatory markers at 14 times the concentration used for cigarettes⁺



Severely damaged lung tissue after 27 cigarette puffs 27 puffs cigarette smoke



myblu did not elicit any biological response at 80 times the concentration used for cigarettes

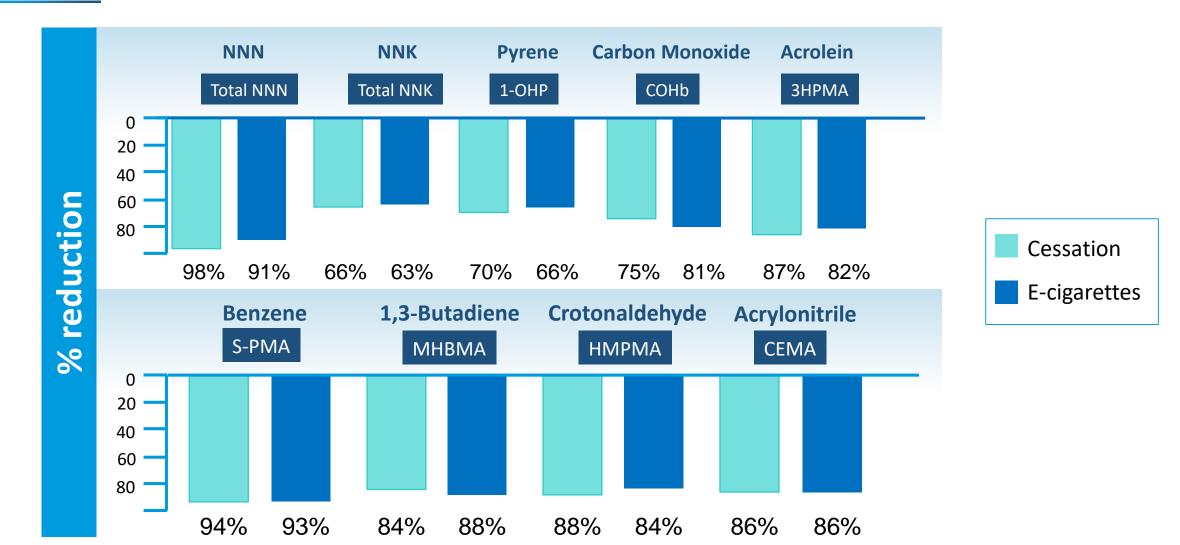


* High content screening on human bronchial cells measuring cell stress and death



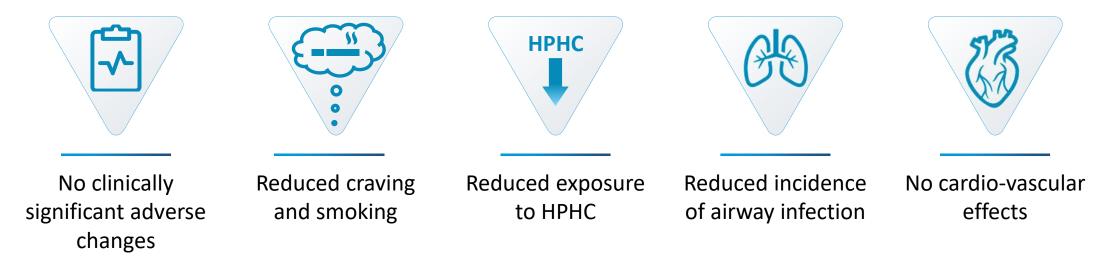
BIOMARKERS OF EXPOSURE FOR VAPERS INDISTINGUISHABLE FROM QUITTERS





94 ×





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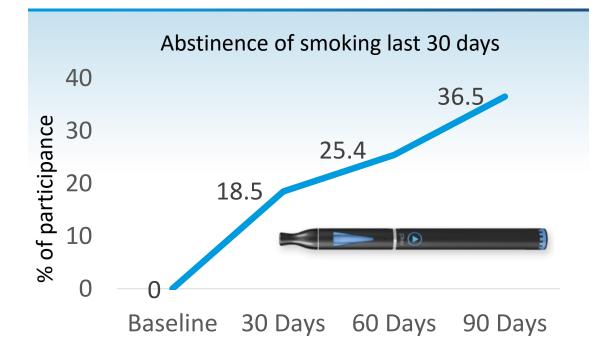
Regulatory Toxicology and Planmarology 92 (2018) 226–238.	Regulatory Texicology and Pharmacology 87 (2017) 36–53 Contents lists available at ScienceDirect	TOXICOLOGY MECHANISMS AND METHODS, 2016 VOL. 26, NO. 6, 453-464 http://dx.doi.org/10.1080/15376516.2016.1196282
Contents jists avaluable at science/lifect Regulatory Toxicology and Pharmacology ELSEVIER journal homopage: www.elsevior.com/locate/yrtph	Regulatory Toxicology and Pharmacology	RESEARCH ARTICLE OPEN ACCESS Reductions in biomarkers of exposure (BoE) to harmful or potentially harmful constituents (HPHCs) following partial or complete substitution of cigarettes with electronic cigarettes in adult smokers
Evaluation of the safety profile of an electronic vapour product used for two years by smokers in a real-life setting Tanvir Walele [®] , Jim Bush ^b , Annelize Koch ^c , Rebecca Savioz ^d , Claire Martin ^d , Grant O'Connell [®]	Measurement of cardiovascular and pulmonary function endpoints and other physiological effects following partial or complete substitution of cigarettes with electronic cigarettes in adult smokers	Grant O'Connell ^a , Donald W. Graff ^b and Carl D. D'Ruiz ^c ⁹ Fontem Ventures, B.V. Scientific and Regulatory Affairs, Amsterdam, The Netherlands; ^b Celerion Inc, Lincoln, USA; ^c Fontem Ventures, B.V. Greensboro, NC, USA
 ⁴ Jenem Verhare, Korkav Skonskon 101, 1001 IIA Annerikan, VEN Velkelands ⁴ Canzon Chinin Romart Unit, Hydre Stren, Lenk, L52 9UH, UK ⁴ Canzon Chinin Romart, Methy Tydy, Crist 400, UK ⁴ Canzon Chini Romart, Methy Tydy, Crist 400, UK ⁴ Canzon Chini Romart, Methy Tydy, Crist 400, UK ⁴ Canzon Chini Romart, Methy Tydy, Crist 400, UK ⁴ Canzon Chini Romart, Methy Tydy, Crist 400, UK ⁴ Canzon Chini Romart, Methy Tydy, Crist 400, UK ⁴ Canzon Chini Romart, Methy Tydy, Crist 400, UK ⁴ Chineses S.A., Arafas 6, 1426 Concie, Switterland 	Carl D. D'Ruiz ^{a, *} , Grant O'Connell ^{b, **} , Donald W. Graff ^c , X. Sherwin Yan ^d ^a Clinical Study Consultant, Fourier Ventures, Corrections, NC, USA ^b Fonton Ventures, Scientific and Regulatory Affairs, Amsterdam, The Netherlands ^c Oderion, Linicals III, USA ^d Antiliant Affaires Consome Ventures by Clinical Science BC, USA	ABSTRACT Changes in fifteen urine, blood and exhaled breath BoEs of HPHCs representing classes of compounds reported by FDA to be significant contributors to smoking-associated disease risks were measured in 105 clinical-confined subjects following candomization and a five dav force-dwitch from usual brand ArticLE HISTORY Received 25 April 2016 Revised 27 May 2016



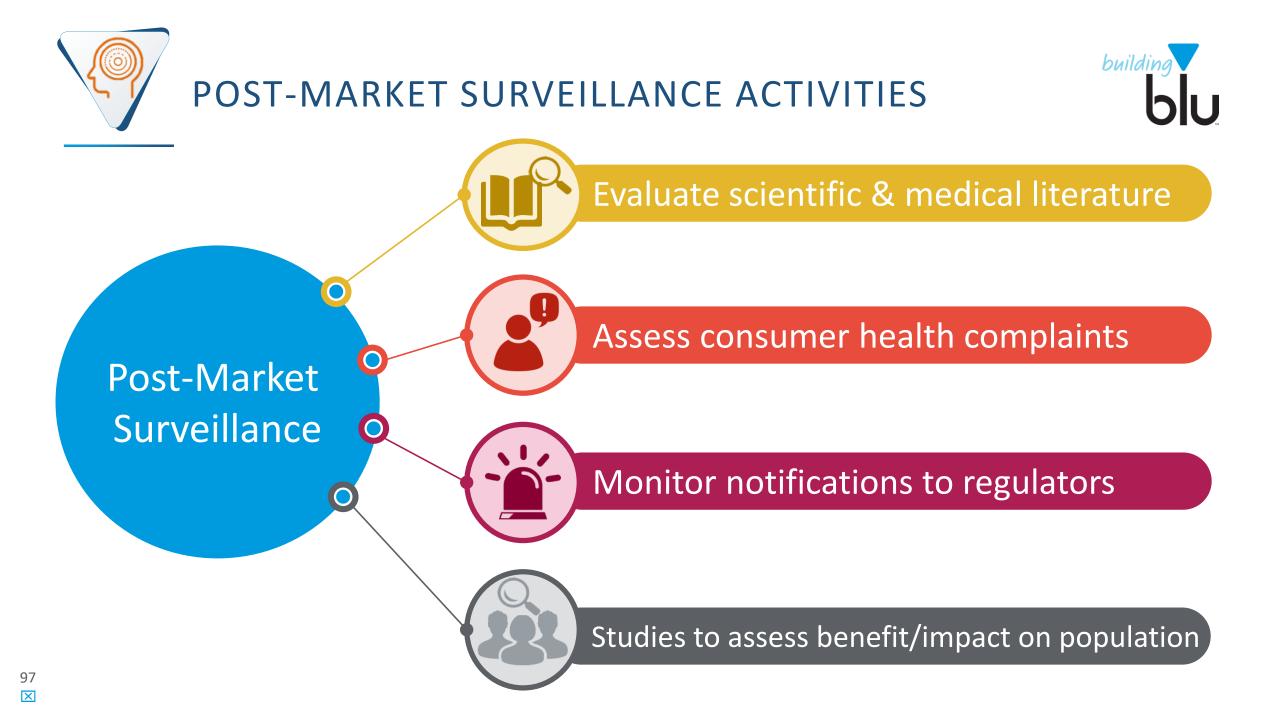
VAPING IS NOT A GATEWAY TO SMOKING



- / Dynamic population modelling backed up by real data
- / Of 20,676 frequent US vapers...
- / Only 34 were never smokers that went on to smoke
- / Harm reduction potential to population as a whole



/ Dual users are on a longer journey to smoking abstinence



SUBSTANTIAL PRODUCT ASSESSMENT IS ESSENTIAL TO EVALUATE SAFETY AND HARM REDUCTION POTENTIAL





Product Characterisation

Pre-Clinical Studies

Clinical Studies

Pre-Market Consumer Studies

Post-Market Surveillance