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Clinical study shows reduced exposure to selected harmful and potentially harmful constituents when switching from cigarettes to in-market heated tobacco products, including Ploom TECH+ and Ploom S 2.0

Japan Tobacco Inc. (JT) (TSE: 2914) today has announced the results of a clinical study which demonstrates a reduction in exposure to, and uptake of, selected harmful and potentially harmful constituents (HPHCs)¹ in healthy Japanese adult smokers who switched to four in-market heated tobacco products, including Ploom TECH+ and Ploom S 2.0. The study was conducted in consultation with a medical advisor, Yuji Kumagai, M.D., Ph.D. Professor, Kitasato Clinical Research Center.

“With this study, the JT Group contributes another small but meaningful piece to the jigsaw of scientific evidence on heated tobacco products. Although further research is required, these results strongly underpin the potential of heated tobacco products, including Ploom TECH+ and Ploom S 2.0, to reduce the health risks associated with smoking,” said Ian Jones, JTI Vice President, R&D Principal Scientist. “We continue to conduct research to provide scientific evidence of the potential benefits of using our Reduced-Risk Products². As we continue our studies, we will communicate our research data on our science website, JT-science.com,” added Jones.

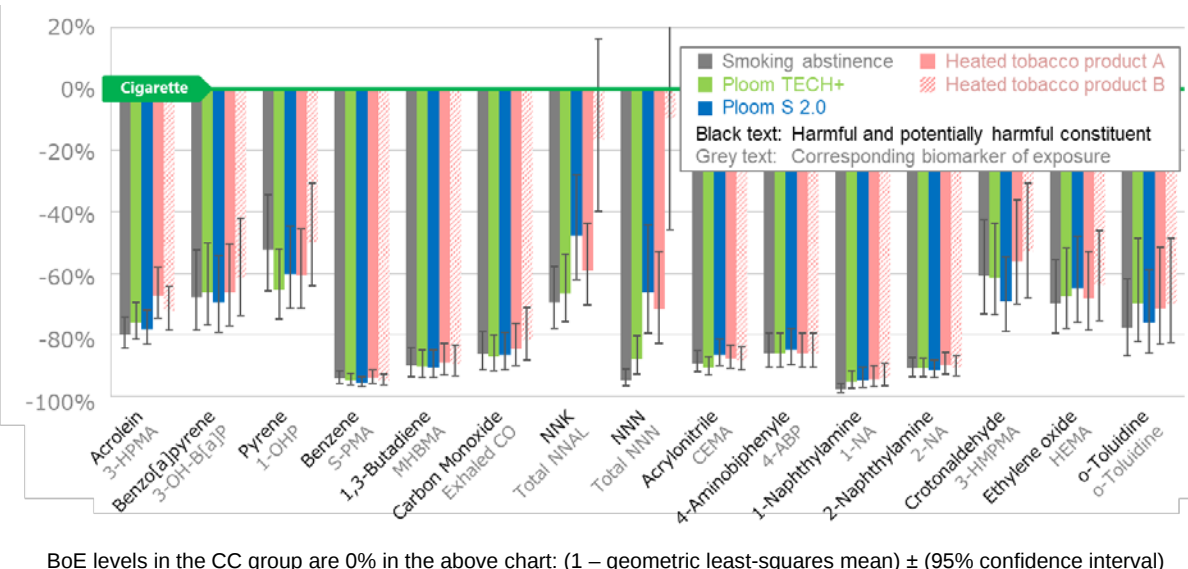
Research Results

- Healthy Japanese adult smokers were randomly assigned for five days to either a group who:
 - (a) switched to Ploom TECH+,
 - (b) switched to Ploom S 2.0,
 - (c) switched to a heated tobacco product A marketed by other company,
 - (d) switched to a heated tobacco product B marketed by other company,
 - (e) continued to smoke their own brand of cigarettes (hereinafter CC), or
 - (f) abstained from smoking.

¹ U.S. Department of Health and Human Services, Food and Drug Administration, Harmful and Potentially Harmful Constituents in Tobacco Products and Tobacco Smoke: Established List, April 3, 2012.

² Reduced-Risk Products (RRPs) are products with the potential to reduce the health risks associated with smoking.

- After the five-day study period, the levels of Biomarkers of Exposure (BoEs) of the selected HPHCs observed in the four heated tobacco product groups were significantly reduced to that observed in the CC group.
- Significantly, the magnitude of the reduction in BoE levels observed in four heated tobacco product groups was similar to that observed in the smoking abstinence group.



Study overview

- ✓ Study period: September – October 2020 (Study Report Finalization: April 2021)
- ✓ Study venue: Two clinical research facilities (SOUSEIKAI Medical Group, both at Fukuoka, Japan)
- ✓ Study design: 90 healthy adult smokers were randomly assigned for five days to either (a) a group who switched to Ploom TECH + (15 smokers), (b) a group who switched to Ploom S 2.0 (15 smokers), (c) a group who switched to in-market heated tobacco product A marketed by other company (15 smokers), (d) a group who switched to in-market heated tobacco product B marketed by other company (15 smokers), (e) a group who continued to smoke their own brand of cigarettes (CC, 15 smokers) or (f) a smoking abstinence group (15 smokers). Fifteen biomarkers of exposure (BoEs) of the selected HPHCs in urine and exhaled breath, were measured. In addition, daily product consumption and nicotine uptake were measured. This study was conducted after approval to conduct was granted by the Institutional Review Board on each site.
- ✓ Medical advisor: Yuji Kumagai, M.D., Ph.D. Professor, Kitasato Clinical Research Center
- ✓ Selected HPHCs:

Acrolein	Benzo[a]pyrene	Pyrene	Benzene	1,3-Butadiene
Carbon monoxide	4-(Methylnitrosamino)-1- (3-pyridyl)-1-butanone [NNK]	N-Nitrosonornicotine [NNN]	Acrylonitrile	4-Aminobiphenyl
1-Naphthylamine	2-Naphthylamine	Crotonaldehyde	Ethylene oxide	o-Toluidine

JT Science (URL: <https://www.jt-science.com/>)

In addition to providing general explanations on Reduced-Risk Products and nicotine, “JT Science” introduces and explains the company’s R&D resources as well as its approach towards R&D. The site includes a document center which archives external publications such as scientific papers and conference presentations that JT has published, with updated information as needed.



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Japan Tobacco Inc. is a leading international tobacco company with operations in more than 130 countries. With approximately 58,000 employees, it manufactures and sells some of the world's best-known brands including Winston, Camel, MEVIUS and LD. The JT Group is committed to investing in Reduced-Risk Products (RRP) and currently markets its heated tobacco products under the Ploom brand and various e-cigarette products under its Logic brand. The Group is also present in the pharmaceutical and processed food businesses.

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