

**Highs in Stock? Inventory of Research Chemical Internet Vendors.**

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**Background:** Novel psychoactive substances (NPS) are commonly sold as research chemicals (RC) via the internet. There are few studies examining the inventory of these RC internet vendors (RCIVs).

**Hypothesis:** The inventory of RCIVs will be large and dynamic.

**Methods:** This was a prospective observational study. RCIVs were identified using a Google search term "Research Chemical Buy" performed 1 week prior to the study start date. The top 12 consecutive working sites were included in the study. Sites that had a broken URL, closed permanently, or were for body building compounds only were excluded. Inventory was taken of all single substance, non-brand name RCs and the sites re-inventoried every week for 12 weeks. Newly listed RCs and those that disappeared from the websites were documented. All RCs were classified into one of the following 13 NPS types: synthetic cathinone, synthetic cannabinoid, benzodiazepine, opioid, arylcyclohexylamine, tryptamine, LSD analogs, 2C, aminoindane, benzofuran, phenidate derivative, amphetamine, and other.

**Results:** During the study period 2 sites became non-functional but were included in the final analysis. The mean number of RCs per site was 52 (range 10-141) for a total of 631 RCs. There was at least one example of all 13 NPS types identified. The two most common types of RC listed were synthetic cathinones and synthetic cannabinoids with a mean of 16 (range 0-39) and 14 (range 0-33) per site, respectively. The least common type of RC encountered was LSD analogs with total of 4 documented. A total of 68 new RCs were added during the 12 weeks. Synthetic cathinones were the most common newly listed RC (n=17). A total of 20 RCs disappeared. Synthetic cannabinoids were the most common RC to disappear (n=8).

**Discussion:** Distribution of NPS as RCs via the internet is a known challenge. This study demonstrates a large inventory of RCs can be found online with fluctuations in inventory consistent with the ever evolving nature of NPS use. A limitation of this study is that we could not verify the veracity of the labeled substances.

**Conclusion:** This study demonstrates that RCIVs advertise a large and dynamic number of NPS.