

Update on the 14th Report on Carcinogens (RoC)

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NTP Board of Scientific Counselors
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The Report on Carcinogens (RoC) is congressionally mandated

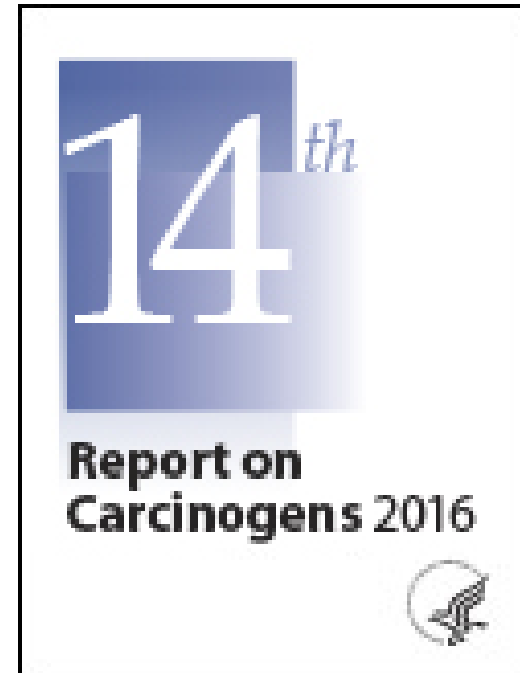
- Public Health Service Act, Section 301(b)(4) (1978, amended 1993).
 - Directs Secretary, Health and Human Services (HHS) to publish a list of carcinogens.
 - Lists substances as “*known*” or “*reasonably anticipated human carcinogens.*”
 - U.S. exposure to listed substances
- National Toxicology Program (NTP) prepares the RoC for the Secretary, HHS using a four-part formal process and established listing criteria.
- Each edition of the report is cumulative.

14th
Report on
Carcinogens



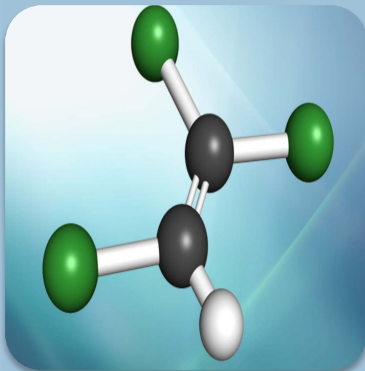
The 14th Report on Carcinogens was released on 11/3/2016

- 248 listings; 7 newly reviewed
 - An industrial solvent
 - A metal and its compounds
 - 5 Viruses
- Media interest
 - Reported by 170 media outlets
 - Examples: CNN, ABC, Fox News, HCP live, Nature World News, Reuters





RoC listings



Trichloroethylene

- Industrial solvent best known for its use as a metal degreaser; mainly used today for synthesis of hydrofluorocarbon refrigerant
- Environmental contaminant; e.g., Superfund sites and Camp Lejeune
- *Known to be a human carcinogen*
 - linked to kidney cancer and possibly non-Hodgkin lymphoma
- EPA (TSCA) has proposed to ban certain uses



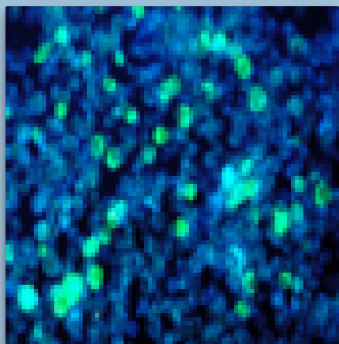
Cobalt and cobalt compounds that release cobalt *in vivo*

- Naturally occurring metallic element that exists in different forms
- Used to make alloys for industrial, medical, and military purposes; cemented carbides; as pigments; and for electronics and green energy
- *Reasonably anticipated to be a human carcinogen*



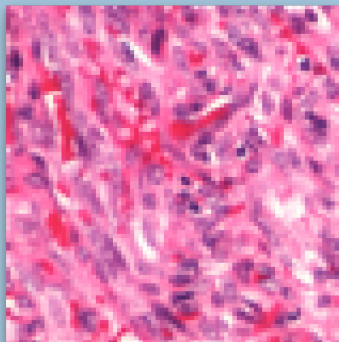
14th Report on Carcinogens

Viruses: Each listed as *known to be a human carcinogen*



Epstein-Barr virus (EBV)

- Herpesvirus that causes infectious mononucleosis
- Infects 9 of 10 people worldwide; transmitted via saliva
- Linked to 6 types of cancer in humans: 4 types of lymphoma, nasopharyngeal and gastric cancer
- Development of a vaccine is ongoing and could have a substantial impact on global burden of cancer
 - 200,000 EBV associated cases of cancer/year



Kaposi sarcoma-associated herpesvirus (KSHV)

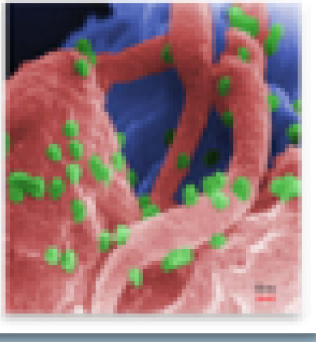
- Herpesvirus usually causing asymptomatic infections
- Highest prevalence in some parts of Africa and among HIV infected people
- Transmitted via saliva and from mother to child
- Risk factors for infection: unprotected sex (MSM); infected family members
- Linked to Kaposi sarcoma and two types of lymphoma in humans

MSM = men who have sex with men



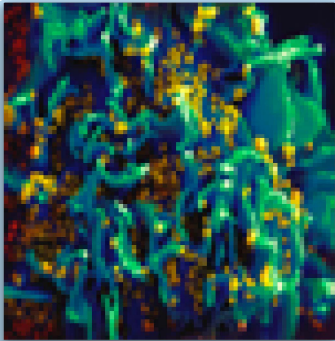
14th Report on Carcinogens

Viruses: Each listed as known to be a human carcinogen



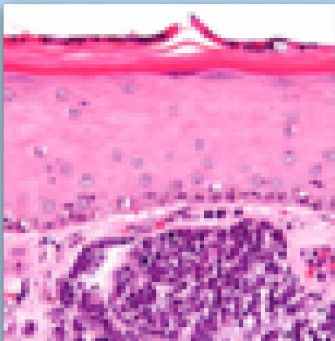
Human immunodeficiency virus, type-1 (HIV-1)

- Retrovirus that causes AIDS
- Transmitted via blood and body fluids; 1.2 million people infected
- Vulnerable populations include MSM, people who inject drugs, female sex workers, and infants in Sub-Saharan Africa
- Linked (or potentially linked) to 12 types of cancers



Human T-cell lymphotropic virus, type-1 (HTLV-1)

- Retrovirus that is usually asymptomatic
- Transmitted via body fluids and blood
- Risk factors: breast feeding, unprotected sex, needle sharing
- Linked to adult T-cell leukemia/lymphoma



Merkel cell polyomavirus (MCV)

- Polyomavirus discovered in 2008
- Common infection
- Route of transmission not clear but may be transmitted via skin shedding
- Linked to Merkel cell carcinoma

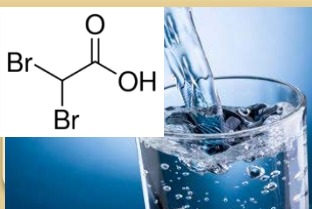


Substances under or proposed for evaluation



Shift work at night, light at night, and circadian disruption

- Selected for evaluation and monograph in preparation



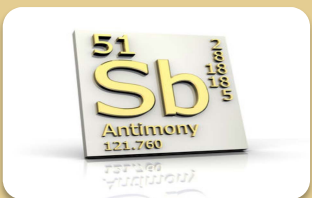
Haloacetic acids (HAAs) found in drinking water

- 13 individual HAAs or potential class or subclass
- Selected for evaluation and monograph in preparation



H. pylori

- Gram negative, multi-flagellated bacterium
- Selected for evaluation and monograph in preparation



Antimony trioxide

- Proposed for evaluation



Clarifications and adjustments

Process for the Preparation of the RoC

Select substances for evaluation

Invite nominations
↓
Conduct scoping and problem formulation activities
↓ Scientific and/or public input as needed
Develop draft concepts
↓ Public comment
NTP BSC review (public meeting & comment)
↓ NTP Director
Finalize concepts and select substances for review

Prepare draft RoC monographs

Develop protocol as needed
↓ Scientific and/or public input as needed
Develop draft RoC monograph
↓ Scientific and/or public input as needed
Interagency review of NTP listing recommendation

Peer review and finalize RoC monographs

Release draft RoC monograph
↓ Public comment
Peer review draft RoC monograph
↓ NTP Peer review panel* or letter review
Present summary of peer review; prepare revised draft RoC monograph
↓ NTP BSC mtg.
Public mtg.
NTP Director
Finalize RoC monograph

Approve and release the RoC

Submit substance
↓ NTP Executive Committee
Approval of listing status
Secretary, HHS
↓
Publish and release RoC

Key

BSC = Board of Scientific Counselors
HHS = Health and Human Services
NTP = National Toxicology Program
RoC = Report on Carcinogens
* Federally chartered advisory groups



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