48. A NEW GENERATION OF THERMAL
DESORPTION TECHNOLOGY
INCORPORATING MULTI MODE SAMPLING
(NRT/DAAMS/LIQUID AGENT) FOR BOTH
ON AND OFF LINE ANALYSIS OF TRACE
LEVEL AIRBORNE CHEMICAL WARFARE
AGENTS (10)

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A multi functional, twin-trap, electrically-cooled thermal desorption (TD) system (TT24-7) will be
discussed for the analysis of airborne trace level chemical warfare agents. This technology can operate
in both military environments (CW stockpile, or destruction facilities) and civilian locations where it is
used to monitor for accidental or terrorist release of acutely toxic substances.

The TD system interfaces to GC, GCMS or
direct MS analytical platforms and provides for on-line
continuous air monitoring with no sampling time blind spots and within a near real time (NRT) context. Using
this technology enables on-line sub ppt levels of agent
detection from a vapour sample. In addition to
continuous sampling the system has the capacity for
off-line single (DAAMS) tube analysis and the ability to
receive an external liquid agent injection.

The multi mode sampling functionality
provides considerable flexibility to the TD system,
allowing continuous monitoring of an environment for
toxic substances plus the ability to analyse calibration
standards. A calibration solution can be introduced via
a conventional sampling tube on to either cold trap or
as a direct liquid injection using a conventional capillary
split/splitless injection port within a gas chromatograph.
Low level (linearity) data will be supplied showing the
TT24-7 analyzing a variety of CW compounds including
free (underivatised) VX using the three sampling modes
described above. Stepwise changes in vapor generated
agent concentrations will be shown, and this is cross
referenced against direct liquid agent introduction, and
the tube sampling modes.

This technology is in use today in several
geographies around the world in both static and mobile
analytical laboratories.

49. THE PATHOLOGY OF AVIAN INFLUENZA
IN BIRDS AND ANIMALS: AN ANALYTICAL
REVIEW (2)

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Influenza virus remains enigmatic despite of
long extensive studies. Avian influenza virus (H5N1)
is able to infect a large spectrum of animal and bird
species. Highly pathogenic avian influenza virus
represents a serious problem both for a human and
birds, particularly for chicks.

Many studies have been performed in order to
show differences between highly and low pathogenic
avian influenza H5N1 viruses, and examine their
biological properties. Many separate pathological and
microscopic descriptions are interspersed in numerous
published articles.

The aim of our study was to analyze data
published in international scientific journals, and to
attempt a generalized view of avian influenza
pathology in various animal and bird hosts.

We summarized and systematized data
describing pathological changes caused by both highly
and low pathogenic types of avian influenza virus
(H5N1) in animals and birds, and developed
generalized descriptions with accent at the type of
virus.

We also tried to show up species specific
features of pathological changes in birds and animals
infected with avian influenza virus (H5N1).

The results of this analytical work may be
useful for pathological studies of a new avian influenza
virus isolates, and for understanding of avian influenza
pathogenesis in birds and animals.

Key words: avian influenza, pathology, analytical
review

50. GLOBAL GENE EXPRESSION PROFILING
OF HUMAN GENOME FOLLOWING
EXPOSURE TO SARIN AND SOMAN (4)

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Toxicogenomics merges genomics with
toxicology is a rapidly expanding field on the
assumption that the transcriptional responses of cells
to different toxic exposure are sufficiently distinct
robust and reproducible to discriminate toxins from
different families/classes which can be called as
"fingerprints" or "Atlases". In this study chemical
weapons sarin was studied in a time and dose
dependent manner after exposure to human
neuroblastoma cell line.

(Sarin or GB) exerts its effect through
inhibition of acetylcholinesterase activity and induction of
delayed neurotoxicity in a dose [EC50 50ppm, (~
372.4µM)] and time-dependent manner. The effect
and/or the mechanism of single or repeated exposures
to GB, however, are less clear and yet to be explored
at cellular level. The present study aims to scrutinize,
the global gene expression profile following sarin
Toxicity in neuronal cells using Affymetrix-GeneChips. A
time-course study on the effect of a single (3 or 24h)
or repeated (24 and 48h) doses of sarin (5ppm) on SH-
SY5Y cells was carried out.