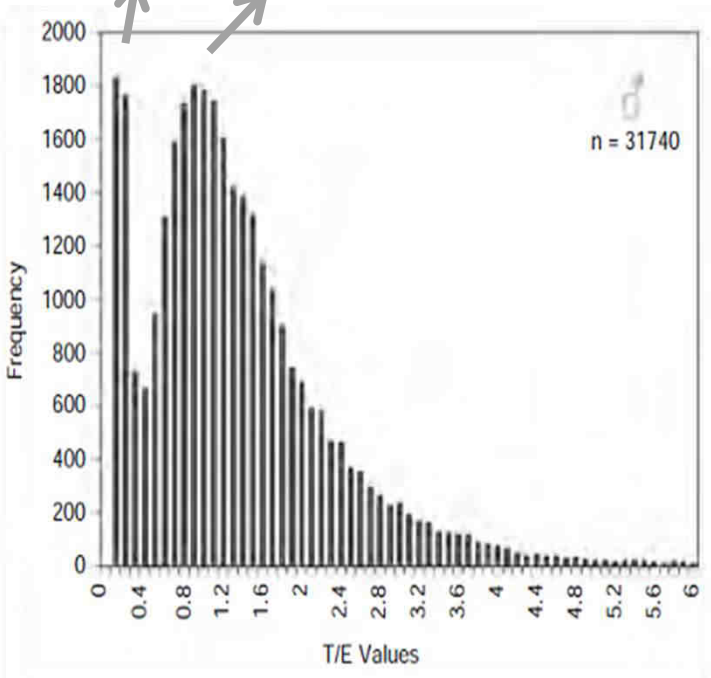
STEROIDI ANDROGENI ANABOLIZZANTI ENDOGENI

- TESTOSTERONE
- EPITESTOSTERONE
- ANDROSTERONE
- ETIOCOLANOLONE
- 5α-ANDROSTANDIOLO
- 5β-ANDROSTANDIOLO
- DHEA
- DHT
- 5-ANDROSTEN-3,17-DIOLO
- 4.6-ANDROSTADIEN-3,17-DIONE
- 4-ANDROSTEN-3,17-DIONE
- Δ6-TESTOSTERONE
- 7α-OH-TESTOSTERONE
- 7β-OH-DHEA
- 4-OH-TESTOSTERONE
- 16α-OH-ANDROSTEN-3,17-DIONE
- FORMESTANO
- 5β-ANDROSTAN-3,17-DIONE

Rapporto T/E:
Testosterone / Epitestosterone

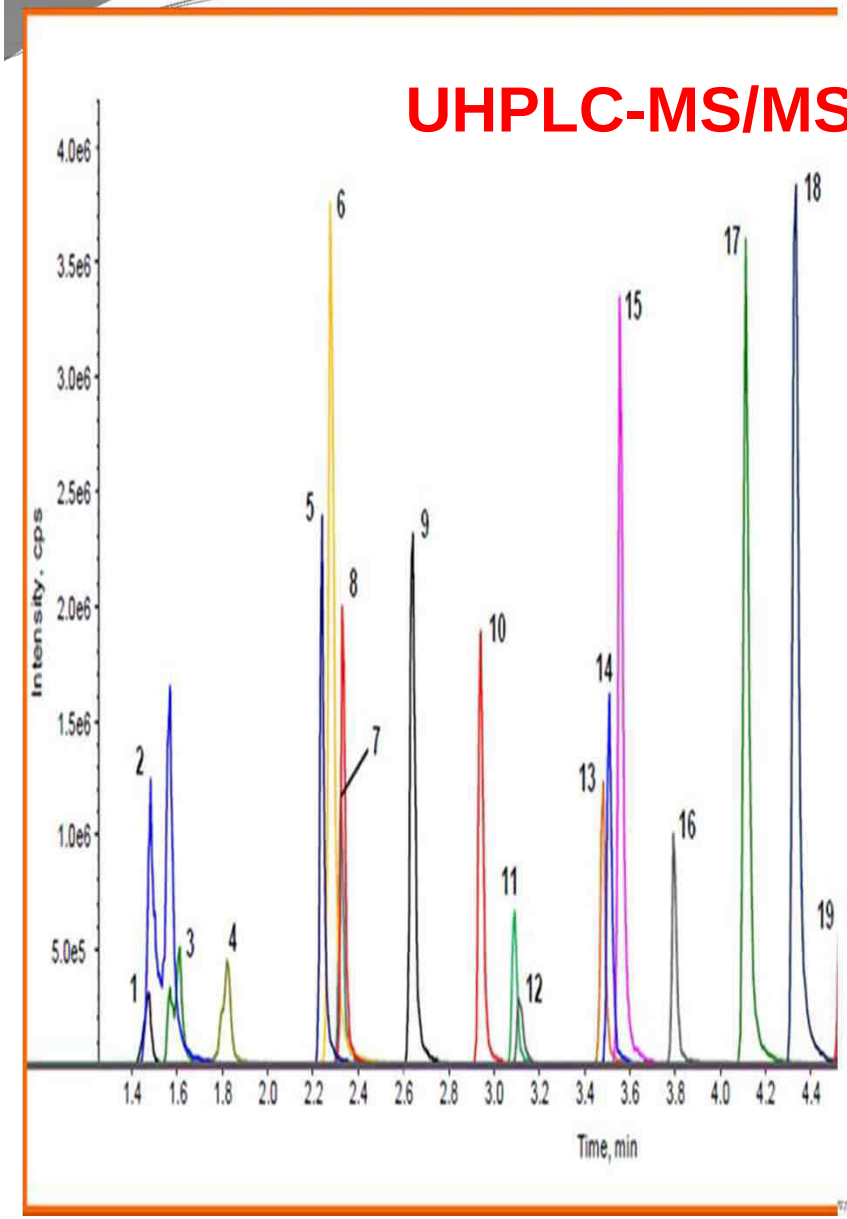
Etnia asiatica

Etnia caucasica e afro-americana

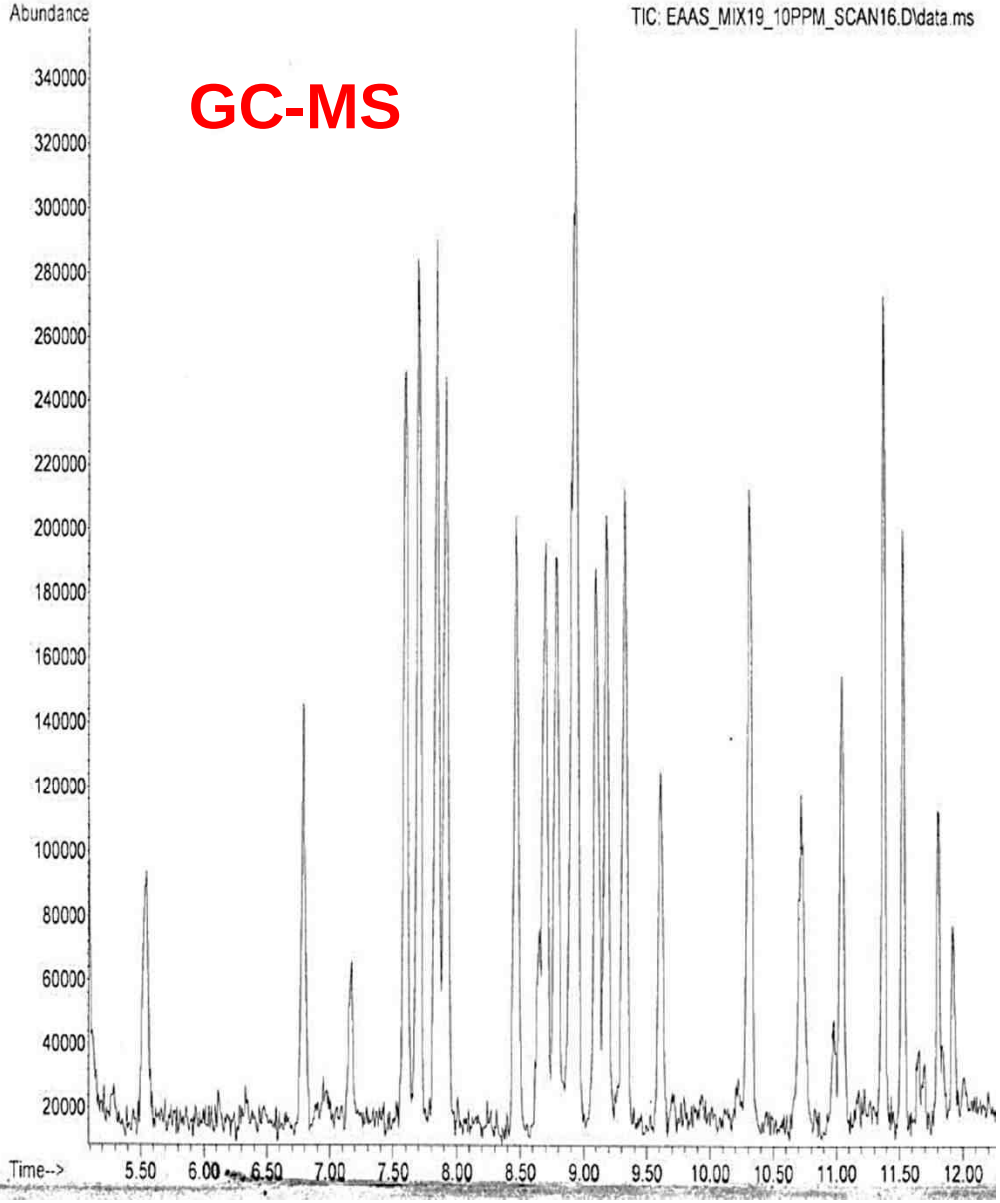


PROFILI CROMATOGRAFICI

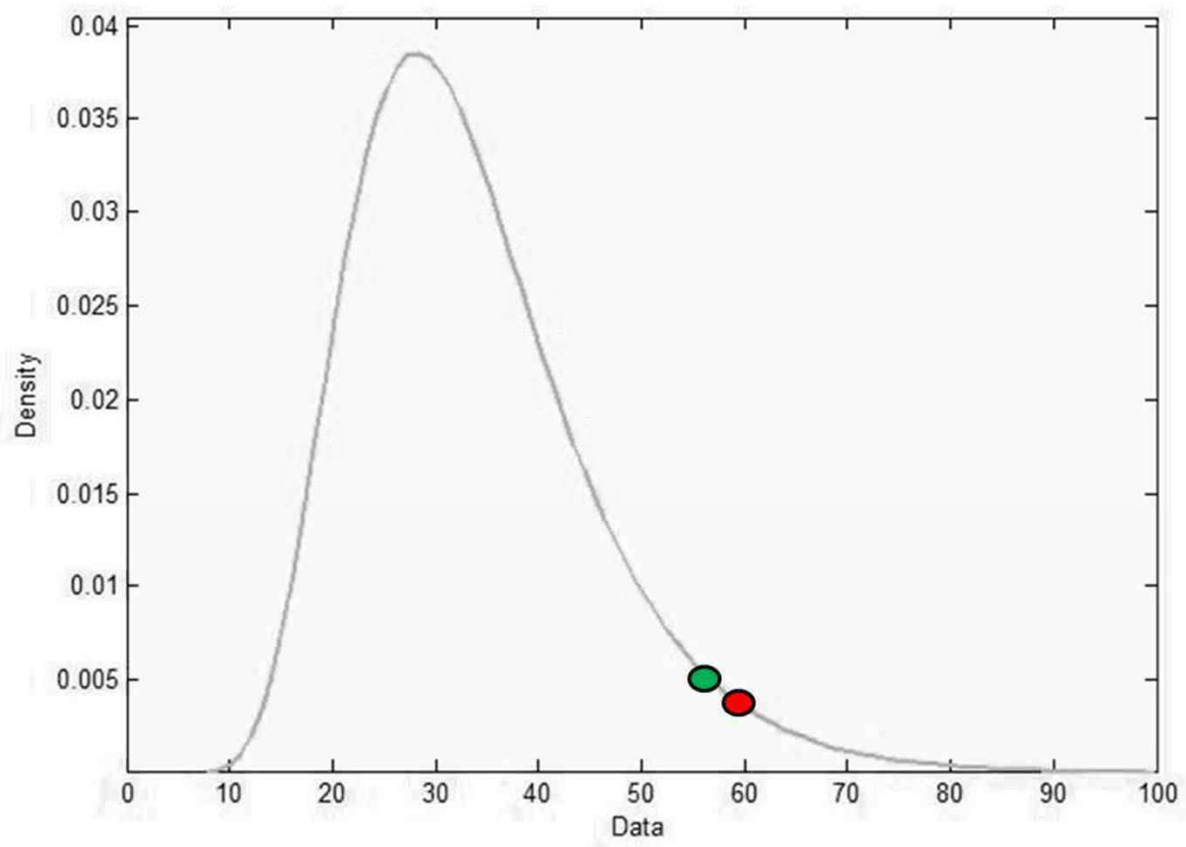
UHPLC-MS/MS



GC-MS



Approccio univariato: bassa sensibilità

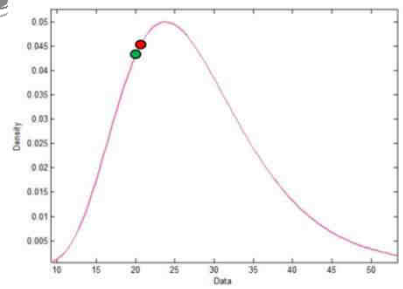


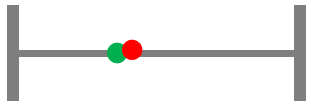
Anomalo 1

Anomalo 2

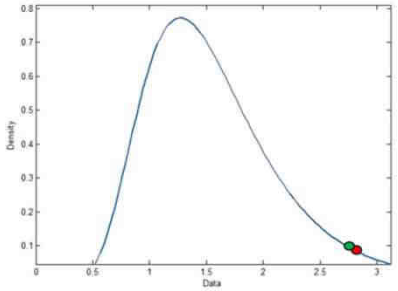
Testosterone

Approccio univariato: bassa sensibilità





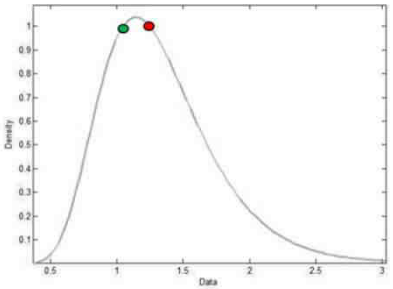
Epitestosterone

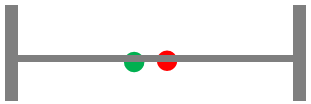


T / E

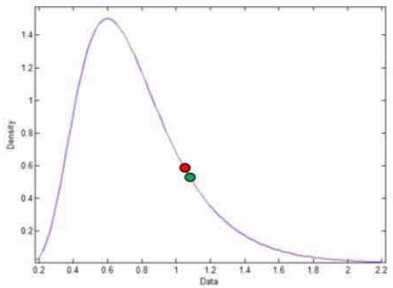
Anomalo 1

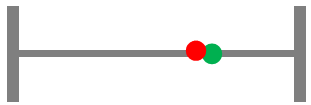
Anomalo 2



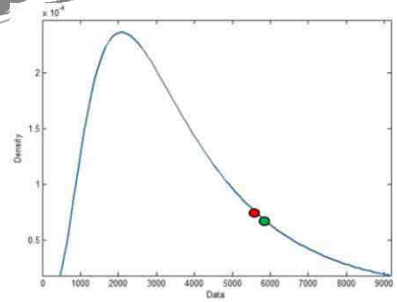


Andro / Etio

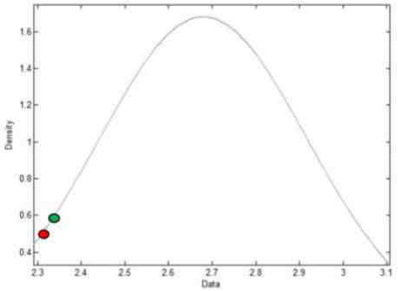




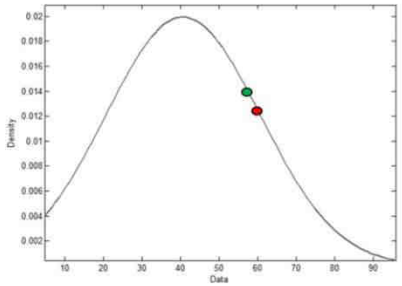
5α-Adiol / 5β-Adiol



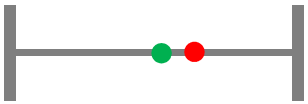
Androsterone

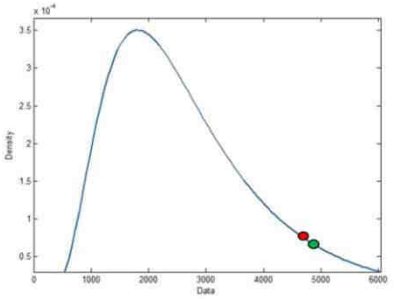


4,6-Adiendione

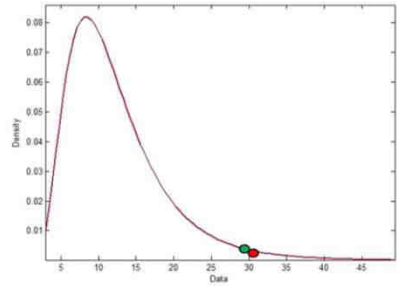


DHEA

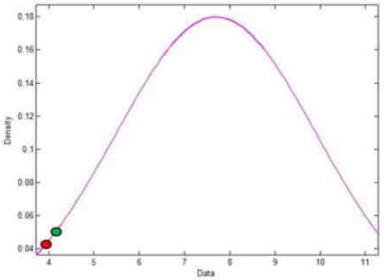




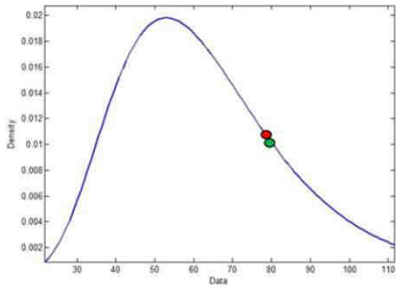
Etiocolanolone



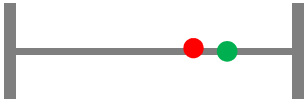
DHT

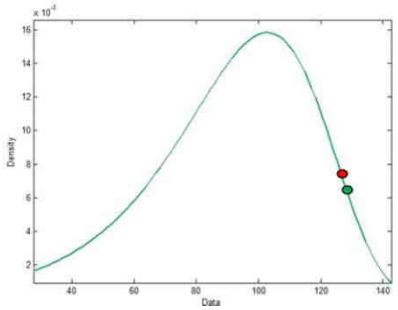


7α-OH-Testosterone



5α-Adiol





5β-Adiol

CAMPIONI REALI

108 campioni di urina prelevati a pazienti in cura

12 campioni 'anomali' → T/E superiore alla media ma < 4

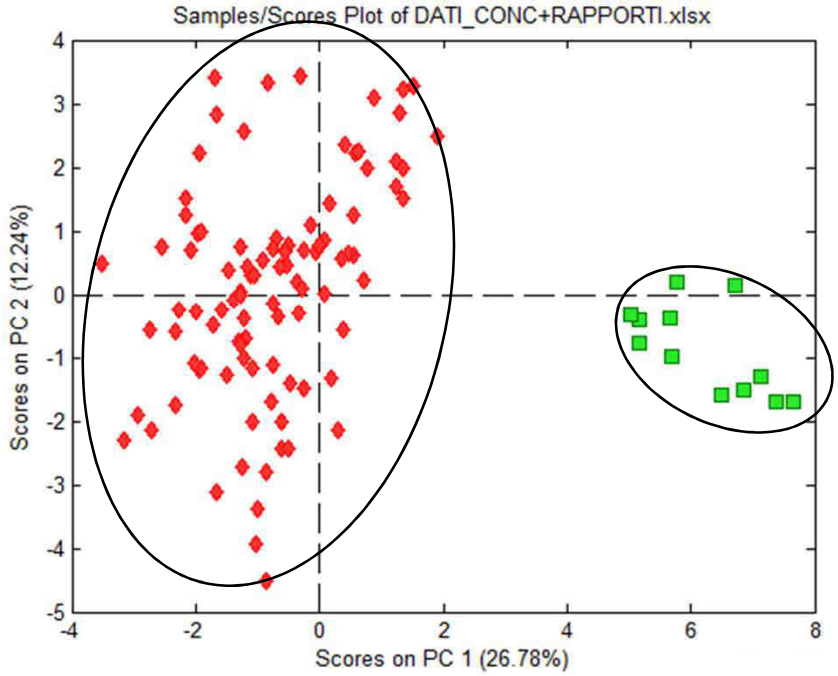
↓

Soggetti sottoposti a cure ormonali

↓

Assuntori di farmaci a base di EAAS

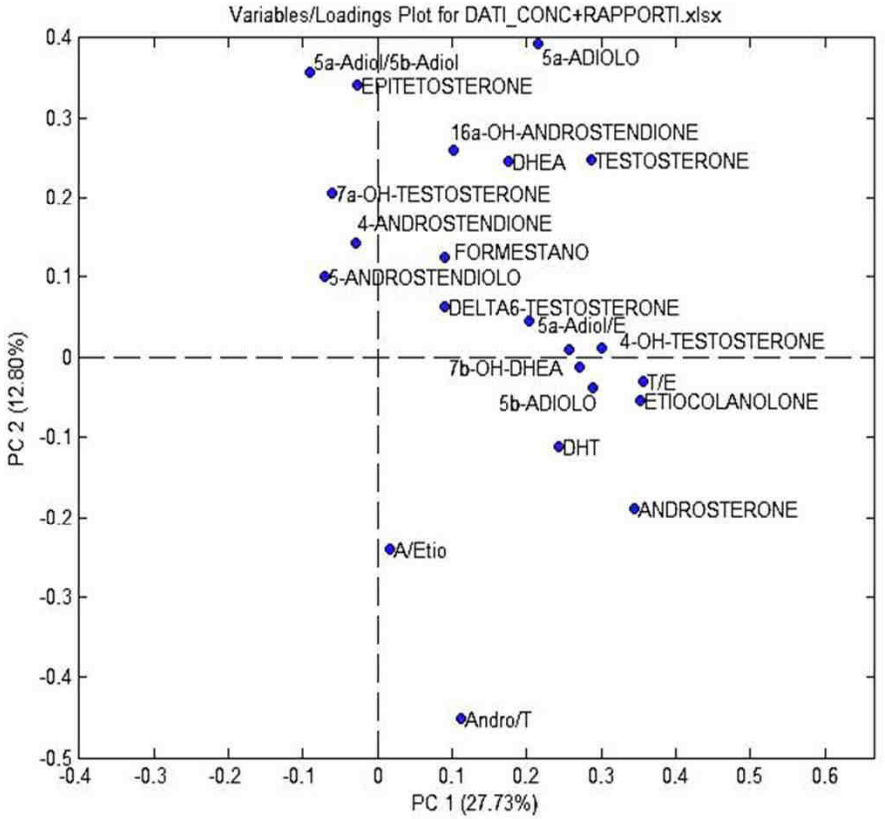
ANALISI MULTIVARIATA: PCA



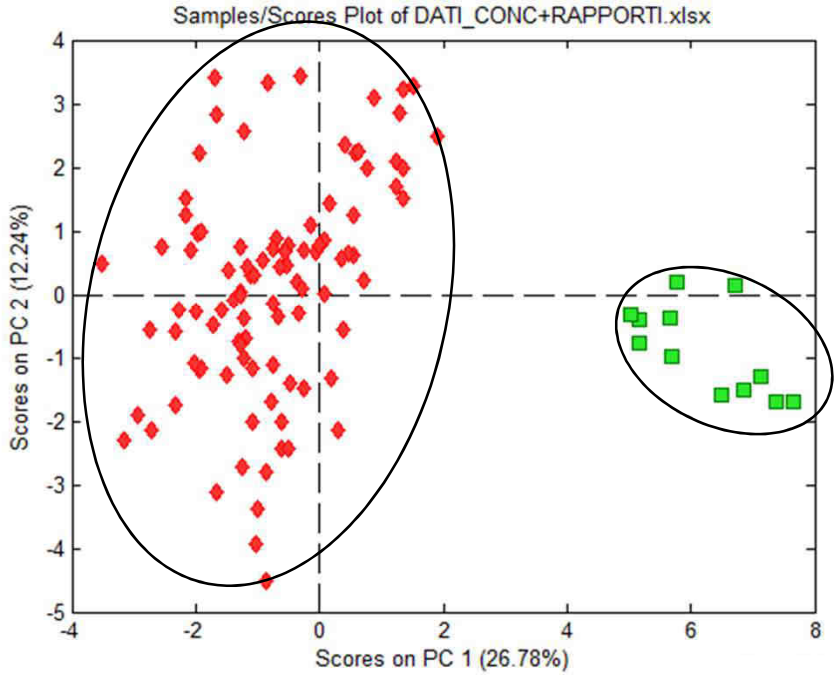
SCORES PLOT

Campioni Anomali

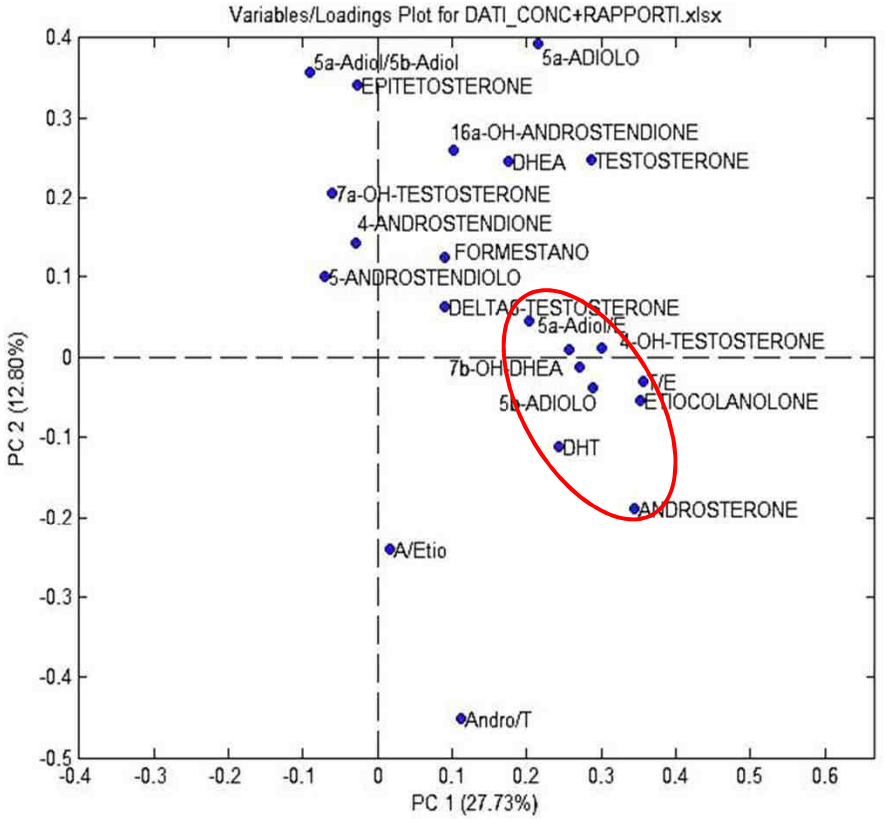
LOADINGS PLOT



ANALISI MULTIVARIATA: PCA

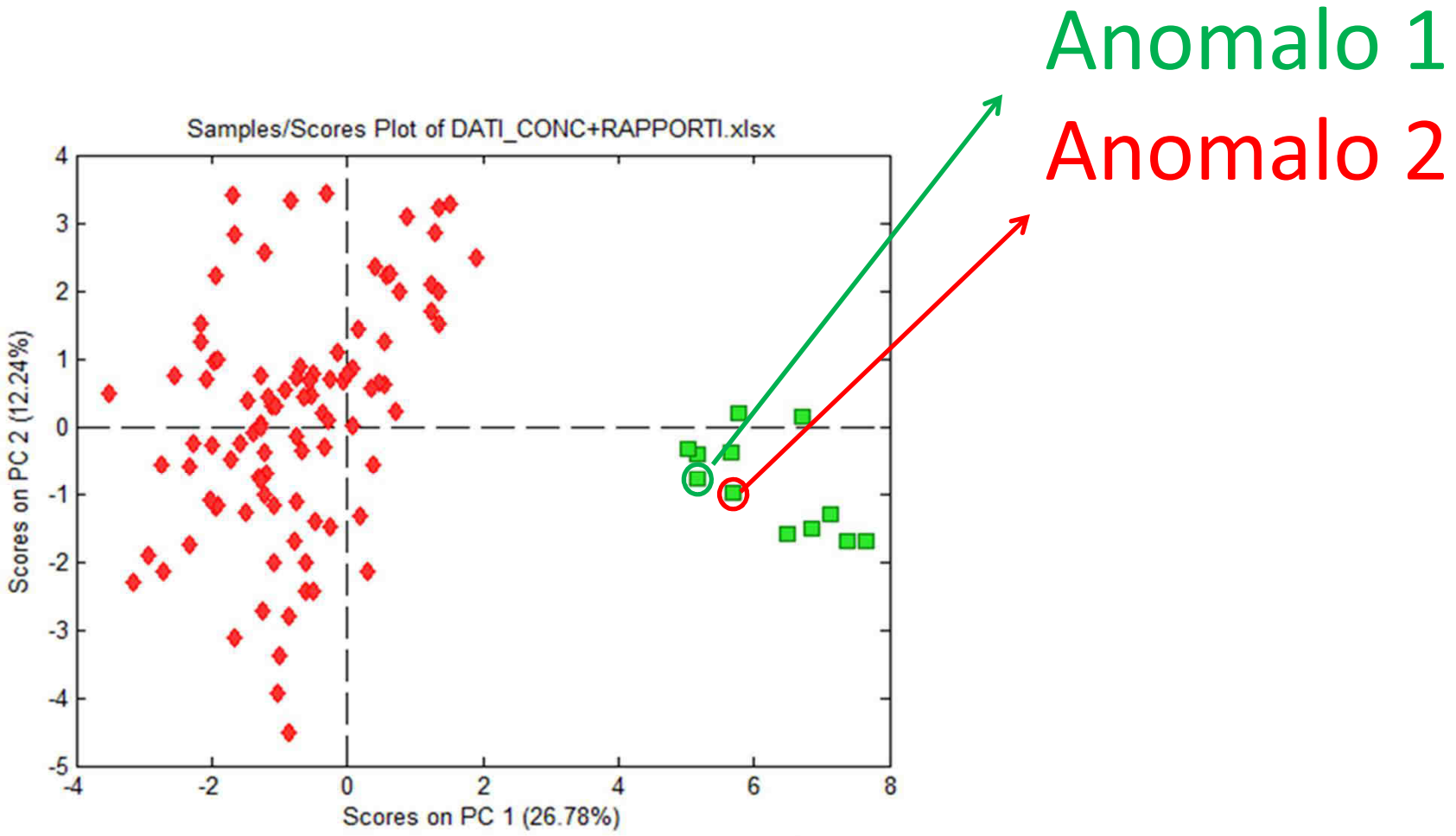


SCORES PLOT



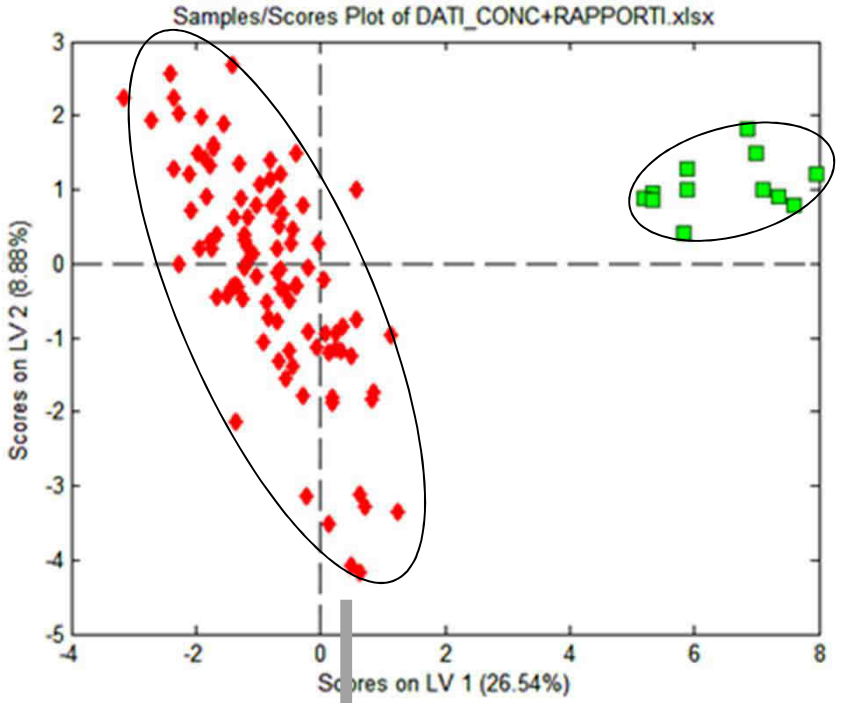
LOADINGS PLOT

Approccio multivariato: elevata sensibilità!



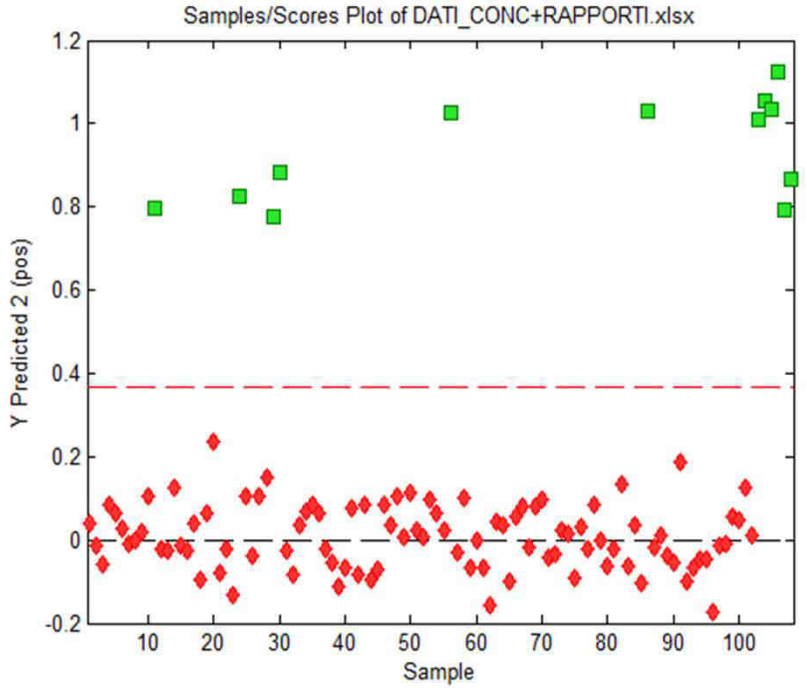
Approccio multivariato rivela campioni anomali non rivelabili mediante approccio univariato

ANALISI MULTIVARIATA: PLS-DA = Partial Least Squares – Discriminant Analysis



Campioni Anomali

Campioni Regolari



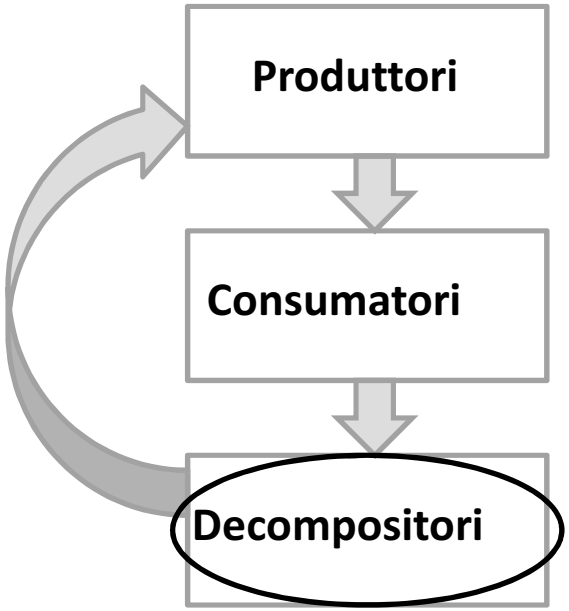
ECOSISTEMA CADAVERICO

"Tre mosche consumano il corpo di un cavallo con la velocita' di un leone"

Linneo, *Systema Naturae*, 1757

- Cadavere umano
- Carcassa animale

Ecosistemi in scala ridotta

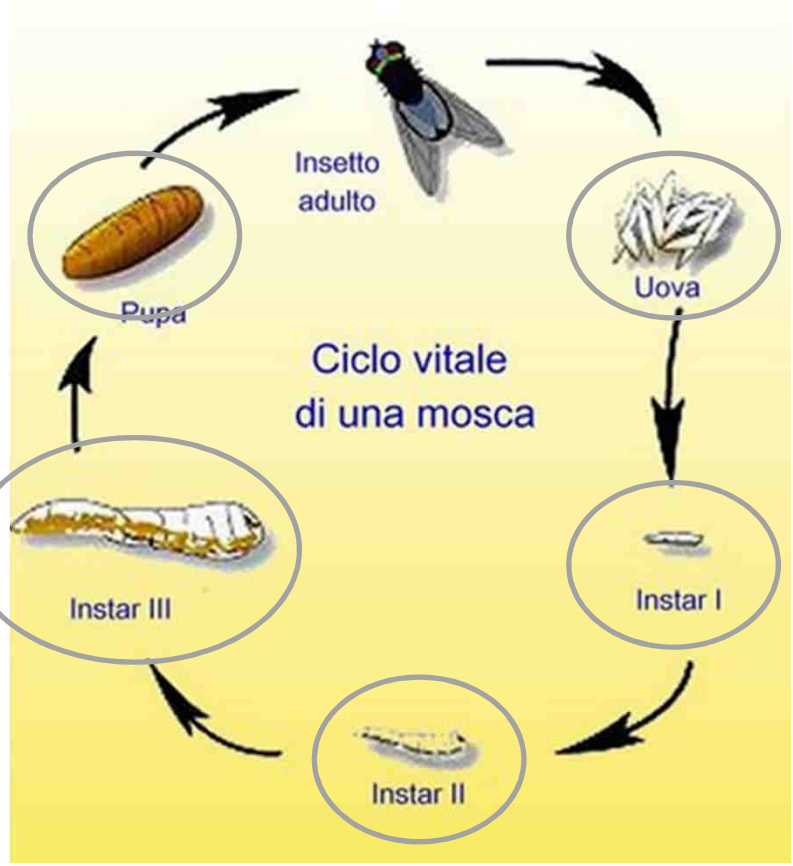


Microfauna cadaverica

La biocenosi cadaverica è dominata a livello qualitativo (varietà di specie) e quantitativo (numero di individui) dalla classe degli Artropodi Esapodi (Insetti)

- Insetti → **80% mosche**
- Altri artropodi
- Batteri
- Funghi
- Insetti Necrobionti
  - Nekròs = morto
  - Biotòs = vitale

RILIEVI ENTOMOLOGICI



INFORMAZIONI OTTENIBILI DAI RILIEVI ENTOMOLOGICI




Quando possono rivelarsi utili? Fasi di decomposizione avanzata

✓ Datazione dell'epoca della morte, PMI (Post Mortem Interval)

✓ Eventuale esposizione a sostanze tossiche ⟶ ENTOMOTOSSICOLOGIA

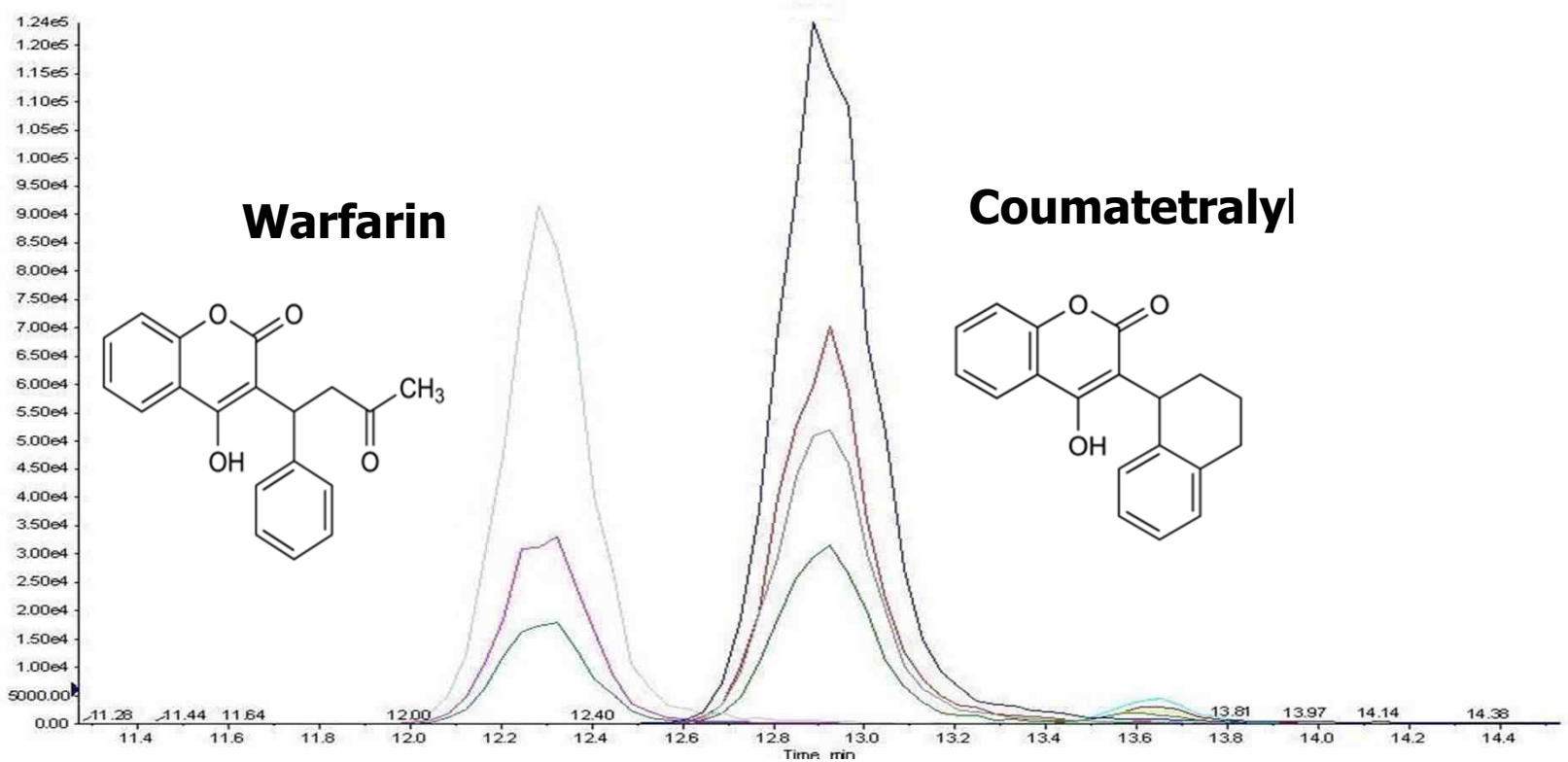
➢ Bioaccumulo

➢ Variazioni del PMI ⟶ **Σ d (t – tLDT)** °C·giorno

Accumulated Degree Days, ADD

1. Ritardo ovodeposizione
2. Accorciamento del ciclo di sviluppo
3. Allungamento del ciclo di sviluppo

RODENTICIDI E ALTRE SOSTANZE VENEFICHE



SOSTANZE STUPEFACENTI (OVERDOSE)

Development of a GC-MS method for methamphetamine detection in Calliphora vomitoria (L.) (Diptera: Calliphoridae)

P.A. Magni, T. Pacini, M. Pazzi, M. Vincenti, I.R. Dadour

Forensic Science International, 2014, 241, 96-101

RISULTATI DELLE ANALISI ENTOMOTOSSICOLOGICHE (3)

La concentrazione di Coumatetralyl rilevata nei pupari dei ditteri cresciuti sul fegato bovino positivizzato a 500 ppb è stata di **12,83 ppb**.
Un risultato sorprendente se confrontato con i corrispondenti valori ottenuti dai precedenti stadi di sviluppo.

- ✓ Non vanno incontro a degradazione
- ✓ Bioaccumulo maggiore
- ✓ Conferma i risultati ottenuti da altri studi su altre sostanze tossiche