

Englisch

Hinweise:

- Es ist auf eine gut lesbare und saubere Darstellung zu achten
- Jede Aufgabe ist direkt auf das Aufgabenblatt in dem dafür vorgesehenen Feld zu lösen
- Erlaubte Hilfsmittel: An der Prüfung abgegebene Wörterbücher (Allg. + Fachwörterbuch Chemie)
- Die Punktzahl von Teil 1 beträgt 60 und 35 für Teil 2 (Teil 1 zählt 2/3, Teil 2 zählt 1/3 der Note); Es gilt der Notenschlüssel der Expertengruppe
- Prüfungszeit: 60 Minuten (Teil 1 ca. 40 Minuten, Teil 2 ca. 20 Minuten)

Die Expertengruppe wünscht Ihnen gutes Gelingen und viel Erfolg!

Name, Vorname:

Note

Teil 1: Übersetzung englischer Fachtext ins Deutsche

Bitte übersetzen Sie den Text der Originalliteratur (*Clinical Chemistry*; Textauszug mit Anpassungen) auf der 2. Seite und schreiben Sie die Übersetzung auf die 5. und 6. Seite.

Hinweis : Jeder übersetzte Satz muss auf einer neuen Zeile begonnen werden.

Defects in Pyrimidine Degradation Identified by HPLC- Electrospray Tandem Mass Spectrometry of Urine Specimens or Urine-soaked Filter Paper Strips

Henk van Lenthe et al.

internal standard mixture

We made stock solutions of the stable-isotope-labeled compounds, and then made an aqueous mixture containing 1 mmol/L each of stable-isotope-labeled thymine, uracil and DHT. This mixture was used as the internal standard (IS) mixture.

liquid urine samples

Fresh urine samples were stored at 4 °C for analysis within 1 week, and others were stored at - 20 °C until analysis. We centrifuged the urines at 10000g for 5 min to remove debris and added 200 µL of clear urine to 20 µL of IS. Of this urine, we injected 20 µL into the HPLC-MS/MS system. Urinary creatinine concentrations were determined by the conventional alkaline-creatinine-picrate method.

urine-soaked filter-paper strips

We dipped filter-paper strips completely into urine and then removed the excess urine by wiping it off along the wall of the test tube. The strips were dried completely at room temperature. IS (20 µL) was pipetted onto the center of each strip, and after the strips were completely dry, they were cut into small pieces and put into a 2-mL Eppendorf tube. The pieces were extracted twice by sonification for 10 min with 750 µL of methanol-H₂O mixture (75 : 25 by volume). Both extracts were combined and dried at 40 °C under a stream of nitrogen. The dried sample was dissolved in 200 µL of HPLC eluant A, and after centrifugation at 10000g for 5 min, 20 µL of the clear extract was injected into the HPLC-MS/MS. The remaining extract was used to measure creatinine as previously described.

hplc-esi ms/ms

The HPLC system consisted of an HP 1100 series binary gradient pump, a vacuum degasser, and a column temperature controller and was connected to a Gilson 231 XL autosampler. The Phenomenex Aqua analytical column was protected by a guard column (SecurityGuard; Phenomenex). The column temperature was maintained at 23 °C. A splitter between the HPLC column and the mass spectrometer was used, and 10–20 µL/min of eluant was introduced into the mass spectrometer. An electrically operated valve was used so that only the eluant from 4.1 to 9 min was introduced into the mass spectrometer (preventing early-eluting salts and late-eluting peaks from contaminating the mass spectrometer).

validation

The linearity and detection limits for each compound were established by injection of calibration mixtures with different concentrations. The stable-isotope-labeled compound of each analyte was used as IS. Analyte concentrations were determined using the slope and intercept of the calibration curve, which were obtained from a linear regression for the analyte/IS peak-area ratio versus the concentration of the calibrator.

The efficiency of the filter-paper extraction was obtained by pipetting 200 µL of a calibration mixture onto the filter paper and treating it as previously described for the urine-soaked filter paper.

Teil 2: Grammatik

1. Aufgabe (25 Punkte)

Schreiben Sie die Verben in der richtigen Zeitform (Aktiv oder Passiv):

1. In the year 122 AD, the Roman Emperor Hadrian (visit) _____ his provinces in Britain.
2. On his visit, the Roman soldiers (tell) _____ him that Pictish tribes from Britain's north (attack) _____ them.
3. So Hadrian (give) _____ the order to build a protective wall across one of the narrowest parts of the country.
4. After 6 years of hard work, the Wall (finish) _____ in 128.
5. It (be) _____ 117 kilometres long and about 4 metres high.
6. The Wall (guard) _____ by 15,000 Roman soldiers.
7. Every 8 kilometres there (be) _____ a large fort in which up to 1,000 soldiers (find) _____ shelter.
8. The soldiers (watch) _____ over the frontier to the north and (check) _____ the people who (want) _____ to enter or leave Roman Britain.
9. In order to pass through the Wall, people (must go) _____ to one of the small forts that (serve) _____ as gateways.
10. Those forts (call) _____ milecastles because the distance from one fort to another (be) _____ one Roman mile (about 1,500 metres).
11. Between the milecastles there (be) _____ two turrets from which the soldiers (guard) _____ the Wall.
12. If the Wall (attack) _____ by enemies, the soldiers at the turrets (run) _____ to the nearest milecastle for help or (light) _____ a fire that (can / see) _____ by the soldiers in the milecastle.
13. In 383 Hadrian's Wall (abandon) _____ .
14. Today Hadrian's Wall (be) _____ the most popular tourist attraction in northern England.
15. In 1987, it (become) _____ a UNESCO World Heritage Site.

Vocabulary: protective (schützende), narrowest (naheste), to guard (bewachen), shelter (Schutz), gateway (Toröffnung); turrets (Türme); abandon (zurücklassen)

2. Aufgabe (10 Punkte)

Schreiben Sie die Verben in der richtigen Zeitform:

1. A: I (cycle / just) _____ 50 km.
2. B: I (cycle) _____ 100 km last week.
3. A: I (write) _____ an essay yesterday.
4. B: I (write / already) _____ two essays this term.
5. A: I (ring / just) _____ my friend.
6. B: I (ring) _____ my friend 10 minutes ago.
7. A: Two days ago, I (watch) _____ a Madonna concert on TV.
8. B: I (see / already) _____ Madonna live in concert.
9. A: I (spend) _____ my summer holiday in Australia last year.
10. B: I (be / not) _____ to Australia yet.

Punkte Teil 2	Note Teil 2
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Name, Vorname:

Punkte Teil 1

Note Teil 1

Deutsche Übersetzung (Teil 1):

