

EIA / MEIA Worksheet

1 Vocabulary warm-up

1 microparticle	vázat se
2 coated	skleněná vlákna
3 capture molecule	zvýšit/snížit
4 surface area	promytí cely
5 reaction vessel	značený
6 matrix cell	rychlost
7 glass fibres	odstranit
8 binding	zadržet
9 cause	mikročástice
10 retain	povrch
11 labelled	reakční nádobka
12 bind	způsobit, zapříčinit
13 cell wash	navázání
14 remove	potažený
15 rate	matricová buňka
16 increase/decrease	záchytová molekula

Source: Dastych, M., English for Laboratory Technicians, Brno – MU, 2008.

2 Microtitre plates

Read and fill the gaps.

A microtitre plate (spelled Microtiter is a registered trade name in the United States) or microplate or microwell plate or multiwell, is a flat plate with _____ (MULTI) "wells" used as small test tubes. The microplate has become a standard tool in _____ (ANALYSIS) research and clinical _____ (DIAGNOSIS) testing laboratories. A very common usage is in the enzyme-linked immunosorbent assay (ELISA), the basis of most modern _____ (MEDICINE) diagnostic testing in humans and animals.

Each well of a microplate _____ (TYPICAL) holds somewhere between tens of nanolitres to several millilitres of liquid. They can also be used to store dry powder or as racks to support glass tube inserts. Wells can be either _____ (CIRCLE) or square. Microplates can be stored at low temperatures for long periods, may be heated to increase the rate of solvent _____ (EVAPORATE) from their wells and can even be heat-sealed with foil or clear film. Microplates with an _____ (EMBED) layer of filter material were developed in the early 1980s by several companies, and today, there are microplates for nearly every _____ (APPLY) in life science research which involves filtration, _____ (SEPARATE), optical detection, _____ (STORE), reaction mixing or cell culture.

Source: http://en.wikipedia.org/wiki/Microtiter_plate

Listening

A Listen and complete the gaps

1 the EIA can be done in a multi-well microtiter plate or any other solid adherent _____

2 the plate is prepared to perform a particular assay by _____ the wells with antibodies that bind to the antigen of interest

3 then the _____ are filled with the clinical sample which could be a sample of serum, respiratory secretions, cerebrospinal fluid, urine or some other body fluid

4 if the antigen is present in the sample, it will _____ to the fixed antibodies

5 the wells are then washed out to remove any of the unattached _____, leaving the antigen of interest stuck to the wells

6 the second _____, directed against another epitope on the target antigen is added

7 these antibodies are conjugated covalently to an _____

8 they bind to the antigen which is fixed in the well and this provides a second level of _____ for the assay

9 the wells are washed again to remove any _____ antibodies

10 a _____ of colorigenic enzyme substrate is added

B Find words for the following definitions:

1 not soft, hard

2 determination of the amount of a particular constituent of a mixture

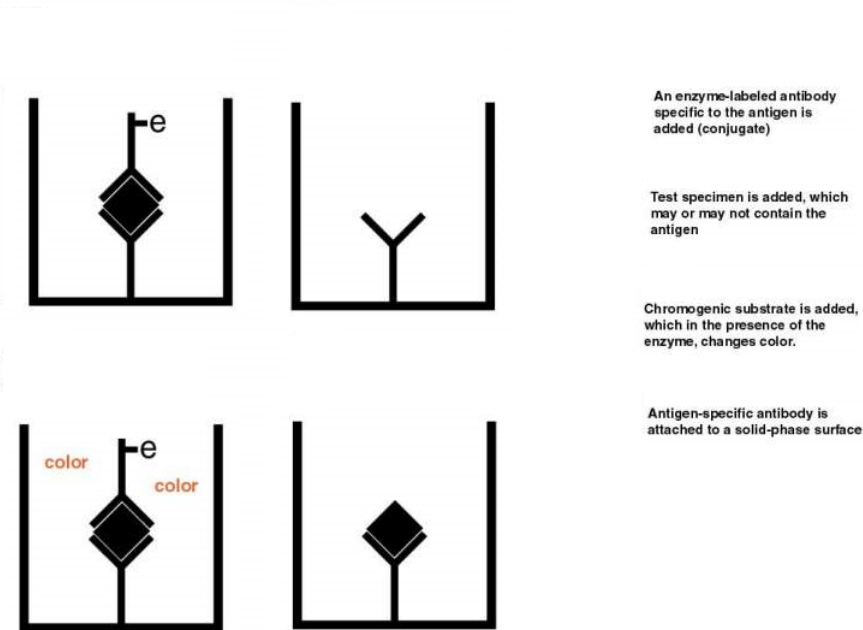
3 take away

4 joined together

5 causing a substance to change colour

Source: https://www.youtube.com/watch?v=70TPrFL_8-M

3 Describing the assay



An enzyme-labeled antibody specific to the antigen is added (conjugate)

Test specimen is added, which may or may not contain the antigen

Chromogenic substrate is added, which in the presence of the enzyme, changes color.

Antigen-specific antibody is attached to a solid-phase surface

Source: https://www.dshs.state.tx.us/lab/serology_eia.shtm

4 Grammar – Passive voice

42.3 Put the verb into the correct form, present simple or past simple, active or passive.

- 1 It's a big factory. Five hundred people are employed (employ) there.
- 2 Did somebody clean (somebody / clean) this room yesterday?
- 3 Water (cover) most of the earth's surface.
- 4 How much of the earth's surface (cover) by water?
- 5 The park gates (lock) at 6.30 p.m. every evening.
- 6 The letter (send) a week ago and it (arrive) yesterday.
- 7 The boat hit a rock and (sink) quickly. Fortunately everybody (rescue).

42.4 Rewrite these sentences. Instead of using **somebody, they, people** etc., write a passive sentence.

- 1 Somebody cleans the room every day. The room is cleaned every day.
- 2 They cancelled all flights because of fog. All
- 3 People don't use this road much.
- 4 Somebody accused me of stealing money. I
- 5 How do people learn languages? How
- 6 People warned us not to go out alone.

43.3 Rewrite these sentences. Instead of using **somebody** or **they** etc., write a passive sentence.

- 1 Somebody has cleaned the room.
The room has been cleaned.
- 2 Somebody is using the computer right now.
The computer
- 3 I didn't realise that somebody was recording our conversation.
I didn't realise that
- 4 When we got to the stadium, we found that they had cancelled the game.
When we got to the stadium, we found that
- 5 They are building a new ring road round the city.
.....
- 6 They have built a new hospital near the airport.
.....

43.4 Make sentences from the words in brackets. Sometimes the verb is active, sometimes passive.

- 1 There's somebody behind us. (I think / we / follow) I think we're being followed.
- 2 This room looks different. (you / paint / the walls?) Have you painted the walls?
- 3 My car has disappeared. (it / steal!) It
- 4 My umbrella has disappeared. (somebody / take) Somebody
- 5 Sam gets a higher salary now. (he / promote) He
- 6 Ann can't use her office this week. (it / redecorate) It
- 7 There was a problem with the photocopier yesterday, but now it's OK.
(it / work) It again. (it / repair) It
- 8 When I went into the room, I saw that the table and chairs were not in the same place.
(the furniture / move) The
- 9 A neighbour of mine disappeared six months ago. (he / not / see / since then)
He
- 10 I wonder how Jane is these days. (I / not / see / for ages)
I
- 11 A friend of mine was mugged on his way home a few nights ago. (you / ever / mug?)
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Source: Murphy, R., English Grammar in Use, Cambridge University Press, 2012.