

Quiz Date: 21st August 2020

Direction (1-5): Read the following passage carefully and answer the questions given below it. Certain words are given in bold to help you locate them while answering some of the questions.

Bhubaneswar-based researchers have discovered that activation of a particular protein (TRIM16) can turn out to be a potential therapeutic intervention strategy for neurodegenerative diseases such as Alzheimer's, Parkinson's and amyotrophic lateral sclerosis (ALS). At the same time, inhibiting this protein in cancer cells can bring about a reduction in tumor proliferation. The results were published in The EMBO Journal. Studies carried out in test tubes and in mice models have shown that the protein has the ability to protect cancer cells from oxidative stress, and inhibiting this protein can therefore lead to reduced tumor growth. Normally, about 30% of newly synthesized proteins in a cell can end up being misfolded, which are then degraded and removed from the cell. Genetic mutations and stress (both cellular and environmental) can increase the rate of misfolding. When the amount of misfolded proteins far exceeds the capacity of cells to degrade and clear them, the cells tend to aggregate the misfolded proteins to reduce toxicity. Though protein aggregates are less toxic to cells, they too can turn toxic if the aggregates increase in number and size, which is what is seen in the case of Alzheimer's, Parkinson's and ALS.

A team of researchers led by Santosh Chauhan from the Cell Biology and Infectious Diseases Unit at the Institute of Life Sciences, Bhubaneswar, has identified a novel mechanism by which misfolded proteins form aggregates and get degraded in the cell. They found the TRIM16 protein playing a role both in the formation of protein aggregates and in their degradation. Protein aggregates are formed when the TRIM16 protein activates a particular pathway (P62-NRF2), while protein aggregates get degraded when TRIM16 enhances a different pathway (autophagy). Autophagy is a process of degrading the unwanted material to clean the cells and keep them healthy. "The current strategy is to use small molecules to enhance the autophagy process to destroy protein aggregates. But small molecules are non-specific and can target other pathways too," says Dr. Chauhan. "Pharmacological activation of TRIM16 protein, on the other hand, will be more specific for therapeutic targeting of neurodegenerative diseases." When more TRIM16 protein is produced by activation, autophagy gets enhanced leading to higher rate of protein aggregate degradation. Since cancer cells proliferate rapidly unlike normal cells, plenty of metabolic waste gets generated and accumulated inside cancer cells. In this study, the researchers have shown that cancer cells via TRIM16 can hijack both the autophagy and P62-NRF2 pathways to keep the cells clean and survive in harsh conditions. The P62-NRF2 pathway detoxifies the reactive oxygen species-related metabolic waste.

When the TRIM16 activity was reduced in cancer cells in vitro, the capacity to proliferate was reduced. "The cancer cells were able to grow normally when the researchers added (complemented) TRIM16 protein, thus validating the crucial role of TRIM16 in cancer cell growth," says Kautilya Kumar Jena from the Institute's Cell Biology and Infectious Diseases Unit and first author of the paper. In the case of animal studies, the researchers first removed (knockout) the TRIM16 protein from cancer cells and then introduced the cancer

cells into mice models. "Compared with controls, tumour growth was drastically reduced in mice when cancer cells did not have the TRIM16 protein," says Dr. Chauhan. "If we pharmacologically decrease the activity of TRIM16 in cancer cells then tumour growth can be inhibited."

Q1. How can the inhibition of the discovered protein in the cancer cell reduce the tumor growth?

- (a) The tumor growth can be reduced through genetic mutation.
- (b) By protecting the cancer cells from oxidative stress.
- (c) By rapidly proliferating unlike normal cells, and by getting accumulated inside cancer cells.
- (d) Both (a) and (c)
- (e) None of these.

Q2. How do the cells in human body help to prevent the chances of neurodegenerative diseases ?

- (a) By increasing the rate of genetic mutation and protein synthesis.
- (b) By increasing the TRIM16 activity in cancer cells in vitro and increasing the capacity to proliferate.
- (c) By degrading and clearing the misfolded, newly synthesized proteins from the body and aggregating the misfolded proteins to reduce the toxicity.
- (d) Both (a) and (b)
- (e) None of these.

Q3. What is/ are the reasons behind the increase in the rate of misfolded proteins?

- (a) Genetic mutations and stress.
- (b) Tumor proliferation and toxicity.
- (c) Autophagy and therapeutic targeting of neurodegenerative
- (d) Both (a) and (b)
- (e) None of these.

Q4. According to the novel mechanism identified by team of researchers at Bhubaneswar, how does the degradation of protein aggregates take place?

- (a) By removing the TRIM16 protein from cancer cells and then introduction of the cancer cells into mice models.
- (b) By inhibiting TRIM16 protein in cancer cells.
- (c) Autophagy is a process of degrading the unwanted material to clean the cells and keep them healthy.
- (d) Both (b) and (c)
- (e) None of these.

Q5. Which of the following statement is definitely false according to the passage?

- (a) Though protein aggregates are less toxic to cells, they too can turn toxic if the aggregates increase in number and size.
- (b) Inhibiting TRIM16 protein in cancer cells can bring about a reduction in tumor proliferation.

- (c) The cancer cells were able to grow normally when the researchers added (complemented) TRIM16 protein, thus validating the crucial role of TRIM16 in cancer cell growth.
- (d) The current strategy is to use small molecules to enhance the autophagy process to destroy protein aggregates.
- (e) If we pharmacologically increase the activity of TRIM16 in cancer cells then tumor growth can be inhibited.

Direction (6-10); Select the phrase/connector (STARTERS) from the given three options which can be used to form a single sentence from the two sentences given below, implying the same meaning as expressed in the statement sentences.

- Q6. (I) The US and India seek to reiterate their strategic partnership at the first 2+2 dialogue in New Delhi on Thursday.
- (II) India is in the cross-hairs of economic nationalists in the Trump administration.
- (i) as both countries seek to reiterate...
- (ii) while the US and India seek to reiterate...
- (iii) however the US and India seek to reiterate...

- (a) Only (i)
- (b) Both (i) and (ii)
- (c) All of (i), (ii) and (iii)
- (d) Only (ii)
- (e) None of these

- Q7. (I) The Maharashtra government urged the Supreme Court to vacate its order.
- (II) The order placed five arrested activists under house arrest in the Bhima-Koregaon violence case.
- (i) Because the Maharashtra government urged...
- (ii) While the Maharashtra government urged...
- (iii) The Maharashtra government urged...

- (a) Only (i)
- (b) Only (ii)
- (c) Only (iii)
- (d) Both (i) and (ii)
- (e) None of these



Q8. (I) The Centre proposed to let 40 lakh people, excluded from the final draft of the National Register of Citizens (NRC) in Assam, to produce additional documents to prove their legacy.

(II) The Supreme Court on Wednesday seemed to agree with the Centre's proposal.

- (i) Because the centre proposes...
- (ii) The Supreme Court on Wednesday...
- (iii) Besides Supreme Court seemed...

- (a) Only (ii)
- (b) All of (i), (ii) and (iii)
- (c) Both (i) and (ii)
- (d) Both (ii) and (iii)
- (e) None of these

Q9. (I) The Gujarat police on Wednesday arrested dismissed IPS officer Sanjiv Bhatt in connection with a 1996 narcotics case.

(II) A Rajasthan-based lawyer, Sumer Singh Rajpurohit, was allegedly framed by the Banaskantha police in the 1996 narcotics case.

- (i) In connection with a 1996 narcotics case...
- (ii) Despite the Gujarat police...
- (iii) The Gujarat Police on Wednesday ...

- (a) Both (i) and (iii)
- (b) Only (ii)
- (c) Both (i) and (ii)
- (d) Only (i)
- (e) None of these

Q10. (I) Section 377 of the Indian Penal Code is a colonial-era provision which criminalises private consensual sexual acts between same-sex adults.

(II) A five-judge Constitution Bench of the Supreme Court will pronounce on Thursday its judgement on the constitutionality of Section 377 of the Indian Penal Code.

- (i) While section 377 of the Indian Penal Code...
- (ii) Despite a five-judge Constitutional Bench...
- (iii) Because section 377 of the Indian Penal Code...

- (a) Only (i)
- (b) Both (i) and (ii)
- (c) Both (ii) and (iii)
- (d) Both (i) and (iii)
- (e) None of these

Directions (11-15): Given below is a paragraph with blank spaces which are numbered against each blank four alternatives are given that may or may not fit the blank. Choose the alternative that fits the blank most appropriately making it grammatically and contextually correct.

____(11)____ the twin bomb blasts at Lumbini Park and Gokul Chat Bhandar here, the two convicts — AnikShafiqueSayeed and Mohammed Akbar Ismail Chowdhari — were trained at a farmhouse in the scenic hills of Chikkamagaluru in Karnataka.

In May 2007, the prime accused in the Gokul Chat bomb blast case, Mohammed RiyazBhatkal, ____ (12) ____ and believed to be in Pakistan, sent Sayeed and Akbar to Bengaluru, where one Waseen alias Yaseen and Abu, received them and took them to Chikkamagaluru.

“Yaseen gave us physical training and ____ (13) ____ . We also practised firing with an air gun for 10 days and learnt about explosives,” Akbar told the interrogators.

Both Sayeed and Akbar ____ (14) ____ and they became friends at a mosque in Pune.

After 10 days of training, Yaseen took them to Bhatkal’s flat in Mangaluru and ____ (15) ____ , Akbar told the police.

- Q11. (a) A few weeks before the blasts
(b) A few days after the Mecca Masjid blast
(c) Nearly three months before
(d) Apart from innocent Muslims
(e) None of these

- Q12. (a) the blast was executed by the Hindu right-wing activists
(b) who is absconding
(c) atrocities against Muslims are increasing
(d) one Mujahid was killed in police firing
(e) None of these

Q13. (a) taught how to use firearms
(b) are increasing in Hyderabad
(c) was executed by the Hindu right-wing activists
(d) must do some activity in Hyderabad
(e) None of these

Q14. (a) told us that atrocities against Muslims
(b) influenced us towards jihadi activities
(c) informed Sayeed and Akbar that they “to take revenge of the Mecca Masjid blast
(d) told them that the blast and discussed about Gujarat riots.
(e) None of these

Q15. (a) killed them and ran away
(b) arrested Moulana Naseeruddin, apart from innocent Muslims
(c) met the convicts and returned Gujarat
(d) the next day they returned to Pune
(e) None of these



The advertisement features a dark blue background with a yellow banner at the top that reads "English Medium". Below the banner is a photograph of four individuals (three women and one man) wearing black t-shirts with the "adda247" logo. The text on the advertisement includes "RBI ASSISTANT MAINS COMPLETE BATCH" in large white and green letters, "Starts February 21, 2020" in yellow, and "10am-11am & 3pm-4pm" in white on a dark blue oval. The background of the entire page is light pink with a large, faint "A" logo and the text "BANKERS" and "a247" visible.

Solutions

S1. Ans. (b)

Sol. Option (b) is the most suitable choice. Refer to paragraph 1 where it is given that “the protein has the ability to protect cancer cells from oxidative stress, and inhibiting this protein can therefore lead to reduced tumor growth”.

S2. Ans. (c)

Sol. Option (c) is the most suitable choice. Refer to paragraph 1 where it is given that ‘which are then degraded and removed from the cell’ and ‘which are then degraded and removed from the cell’.

S3. Ans. (a)

Sol. Option (a) is the most suitable choice. Refer to 8th line of paragraph 1 where it is given that Genetic mutations and stress (both cellular and environmental) can increase the rate of misfolding.

S4. Ans. (d)

Sol. Option (d) is the most suitable choice. Refer to 5th line of paragraph 2 where it is given that “while protein aggregates get degraded when TRIM16 enhances a different pathway (autophagy). Autophagy is a process of degrading the unwanted material to clean the cells and keep them healthy.

S5. Ans. (e)

Sol. Option (e) is the correct choice. It is the only statement which is definitely false according to the given passage. Refer to the last line of last paragraph where this particular statement is given as “If we pharmacologically decrease the activity of TRIM16 in cancer cells then tumor growth can be inhibited.” This is the correct form of the statement.

S6. Ans. (b)

Sol. Starters given in the alternatives (i) and (ii) successfully form the grammatically correct and contextually meaningful sentence without altering the intended meaning. Hence, option (b) is the correct answer.

‘As both countries seek to reiterate their strategic partnership at the first 2+2 dialogue in New Delhi on Thursday, India is in the cross-hairs of economic nationalists in the Trump administration.’

‘While the US and India seek to reiterate their strategic partnership at the first 2+2 dialogue in New Delhi on Thursday, India is in the cross-hairs of economic nationalists in the Trump administration’.

S7. Ans. (c)

Sol. The starter given in the alternative (iii) successfully forms the grammatically correct and contextually meaningful sentence without altering the intended meaning. Hence, option (c) is the correct answer.

‘The Maharashtra government urged the Supreme Court to vacate its order placing five arrested activists under house arrest in the Bhima-Koregaon violence case’.

S8. Ans.(a)

Sol. The starter given in the alternatives (ii) successfully forms the grammatically correct and contextually meaning sentence without altering the intended meaning. Hence, option (a) is the correct answer.

‘The Supreme Court on Wednesday seemed to agree with the Centre’s proposal to let 40 lakh people, excluded from the final draft of the National Register of Citizens (NRC) in Assam.’

S9. Ans. (a)

Sol. The starters given in the alternatives (i) and (iii) successfully form the grammatically correct and contextually meaningful sentence without altering the intended meaning. Hence, option (a) is the correct answer.

‘In connection with a 1996 narcotics case in which a Rajasthan-based lawyer, Sumer Singh Rajpurohit, was allegedly framed by the Banaskantha police, the Gujarat police on Wednesday arrested dismissed IPS officer Sanjiv Bhatt.’

'The Gujarat police on Wednesday arrested dismissed IPS officer Sanjiv Bhatt in connection with a 1996 narcotics case in which a Rajasthan-based lawyer, Sumer Singh Rajpuohit, was allegedly framed by the Banaskantha police.'

S10. Ans. (e)

Sol. None of the given alternatives successfully forms a grammatically correct and contextually meaningful sentence. Hence, the correct answer is option (e).

The correct combined sentence could have been as follows:

'A five-judge Constitutional Bench of the Supreme Court will pronounce on Thursday its judgement on the constitutionality of Section 377 of the Indian Penal Code, a colonial-era provision which criminalises private consensual sexual acts between same-sex adults.'

S11. Ans.(c)

Sol. Option (c) successfully makes a grammatically correct and contextually meaningful sentence. The tone of the sentence where the blank (11) appears suggest that the phrase ' (11) the twin bomb blasts at Lumbini Park and Gokul...' is functioning as an adverbial phrase. Among the given options, only option (c) complements the rest of the sentence. Hence, the correct answer is option (a).

The correct phrase is '*Nearly three months before...*'.

S12. Ans.(b)

Sol. The tone of the sentence suggests that the clause ' (12) and believed to be in Pakistan' is a clause and is functioning as an adjectival phrase, providing information to the noun 'Mohammed Riyaz Bhatkal'.

Among the given options, only option (b) successfully forms a grammatically correct and contextually meaningful sentence. Hence, the option (b) is the correct answer.

The correct phrase which will fill the blank is '*who is absconding*'.

S13. Ans. (a)

Sol. The tone of the phrase suggests that the blank would be filled by a '*predicate-phrase having a finite verb*'. Among the given options, option (a) successfully makes a grammatically correct and contextually meaningful sentence. Hence, option (a) is the correct answer.

The correct phrase which will fill the blank is '*taught how to use firearms*'.

S14. Ans. (e)

Sol. The tone of the sentence suggests that the blank would be filled by a '*predicate-phrase having a finite verb*' so to make a complete sentence. Moreover, the presence of the clause '*they became friends at a mosque in Pune*' after the conjunction '**and**' suggests that the **predicate-phrase** would be introducing the subject-phrase 'Both Sayeed and Akbar'. None of the options successfully make a grammatically correct and contextually meaningful sentence.

Hence, the correct answer is option (e).

The correct phrase could have been '*are from Pune in Maharashtra*'.

S15. Ans. (d)

Sol. The tone of the sentence where the blank appears suggests that the blank would be filled by a **predicate-phrase having a finite verb**. Among the options, only option (d) successfully makes a grammatically correct and contextually meaningful sentence. Hence, option (d) is the correct answer.

The correct phrase is '*the next day they returned to Pune*'.

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