

TriPREP®
Tubex BMC

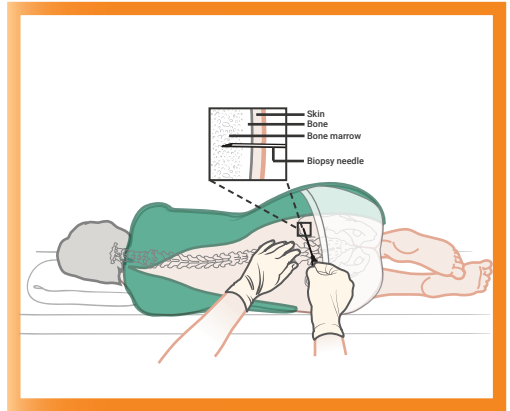
(Autologous Cell Concentration System)

**“Leveraging Osteogenic potential
towards tissue healing”**

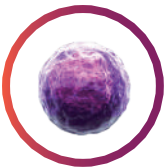
- | **Advanced Vaclok Technology**
Seamless aspiration of Bone Marrow
- | **State-of-Art-5-Hole Jamshidi Needle**
Facilitates high quality harvest

What is Tubex BMC?

Bone Marrow Aspirate drawn from Iliac Crest is processed with our TriPreP® Tubex® BMC kit and serves as an excellent sources of stem cells.



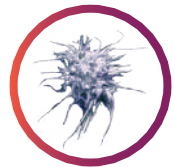
What does it contain?



Hematopoietic Stem cells (HSC)



Mesenchymal stem cells (MSC)



Endothelial Progenitor cells (EPC)

How does it help the regenerative process?

Concentrated cell load accelerates the healing potential.

Endothelial Progenitor cells.

- support vascular cell structure.
- stimulate neoangiogenesis.

Hematopoietic stem cells modulate regeneration.

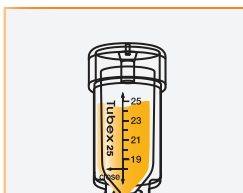
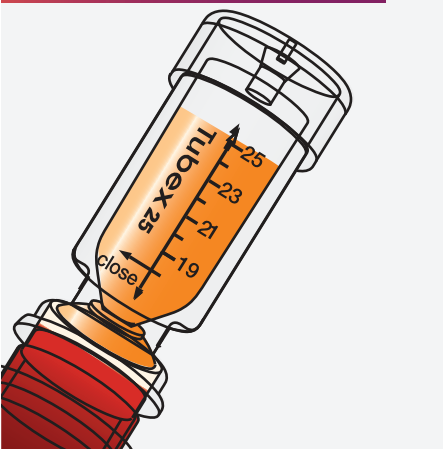
Recruit bone marrow progenitor cells to focus of injury.

Mediates cell to cell adhesion.

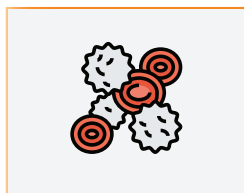
Mediates cellular migration and wound healing.

What is Tubex BMC kit?

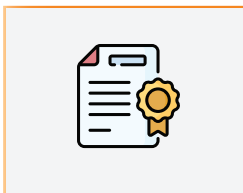
Features



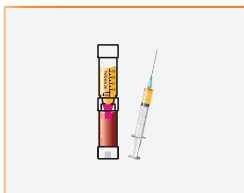
Permits 25-50 ml
Bone Marrow
Concentrate



4-5x times increased
Cell Load from
Baseline

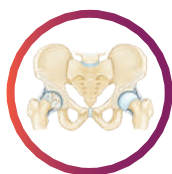


US patented
Technology



Process 8-16 ml of
cellular concentrate

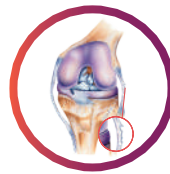
Where is it applicable ?



Avascular
Necrosis



Osetochondral
Lesions



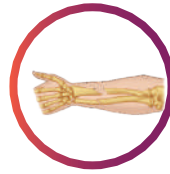
Ligament
Tear



Cartilage
Tear



Spinal
Fusion



Traumatic
Bone Loss

What makes us unique?

TriPREP®
Tubex BMC



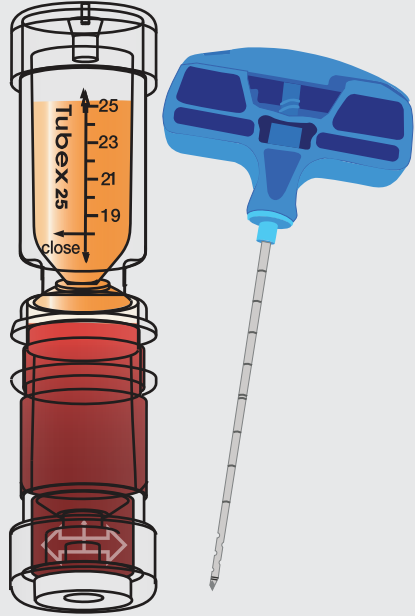
Now complimented by



Premium US imported
Vaclock system

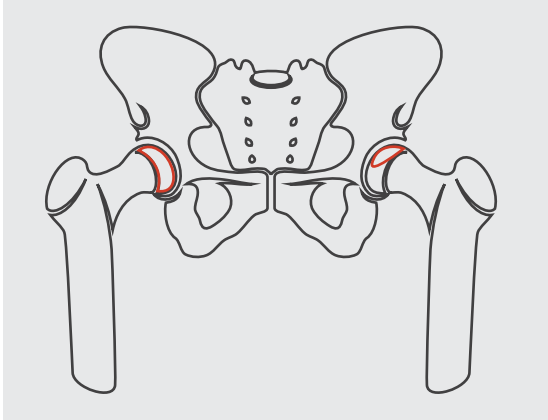


Italian imported five-hole
Jamshidi needle.



“Leveraging
osteogenic
potential
towards tissue
healing”

Indications



Avascular Necrosis (AVN)

Avascular necrosis (AVN) is a disease that results from temporary or permanent loss of blood supply to the bone. When blood supply is cut off, the bone tissue dies and collapses. It most commonly happens in the ends of a long bone. It may affect one or several bones at one time or different bones at different times.

How does TriPREP® Tubex® BMC system help?

Conventional Treatment Practices

- Medications and therapy
 - Osteoporosis drugs
 - Cholesterol-lowering drugs.
 - Blood thinners.
- Electrical stimulation
- Surgical and other procedures
 - Core decompression.
 - Bone transplant (graft)
 - Bone reshaping (Osteotomy)
 - Joint replacement.

Risk factors



Injuries or
Trauma



Medications like
steroids
or bisphosphate



Alcoholism



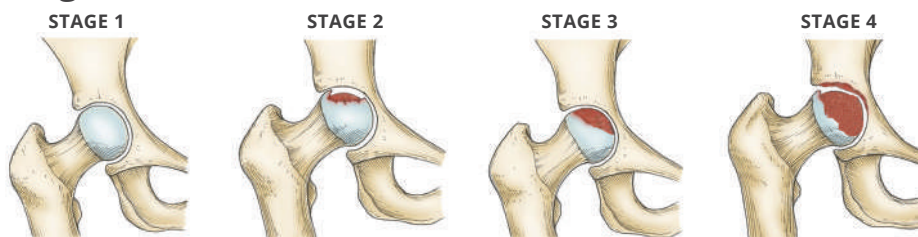
Radiation or
transplantation
procedures

How does TriPREP® Tubex® BMC system help?

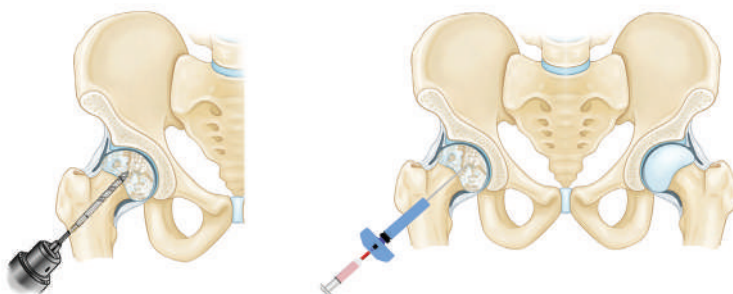
AVN is treated using a surgical procedure called core decompression which involves drilling holes into the femoral head of the hip to relieve pressure in the bone and create new blood vessels to stimulate blood circulation and nourish the affected areas to aid in bone rebuilding. Surgeons also fill these holes with a cocktail mixture of Platelets and Stem cells derived from Bone marrow concentrate facilitating faster healing and bone regeneration.

During this procedure, Bone Marrow Aspirate drawn from Iliac Crest is processed with our TriPREP® Tubex® BMC kit to produce enhanced concentrate of platelets, stem and progenitor cells. Then, the doctor will create a small incision to hip and the necrotic part (dead bone) is removed. Finally, the processed Bone Marrow Concentrate is slowly implanted into the defect area.

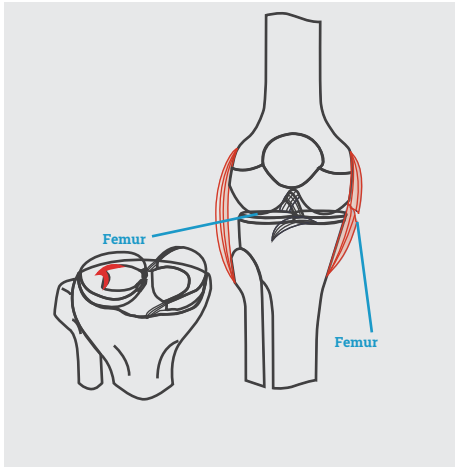
Stages of Avascular Necrosis



Route of Administration



Indications



Cartilage Defects and Tears

Any sprain, stretch or tear in cartilages is associated with cartilage defects. Typically, when someone refers to a tear in the cartilage, they are referring an injury to the meniscus cartilage, the rubbery knee cartilage cushioning the shin bone from thigh bone.

Cartilage defects or meniscus tears are associated with poor blood supply and won't heal on its own thereby resulting in knee replacement.

How does TriPREP® Tubex® BMC system help?

Conventional Treatment Practices

- Pain Medication such as ibuprofen or aspirin
- Physical Therapy
- Braces or Crutches
- Arthroscopic Surgery or Meniscus Repair
- Severe Cartilage defects
 - o Microfracture Surgery
 - o Autologous Cartilage Transfer

Risk factors



Football



Basketball



Tennis

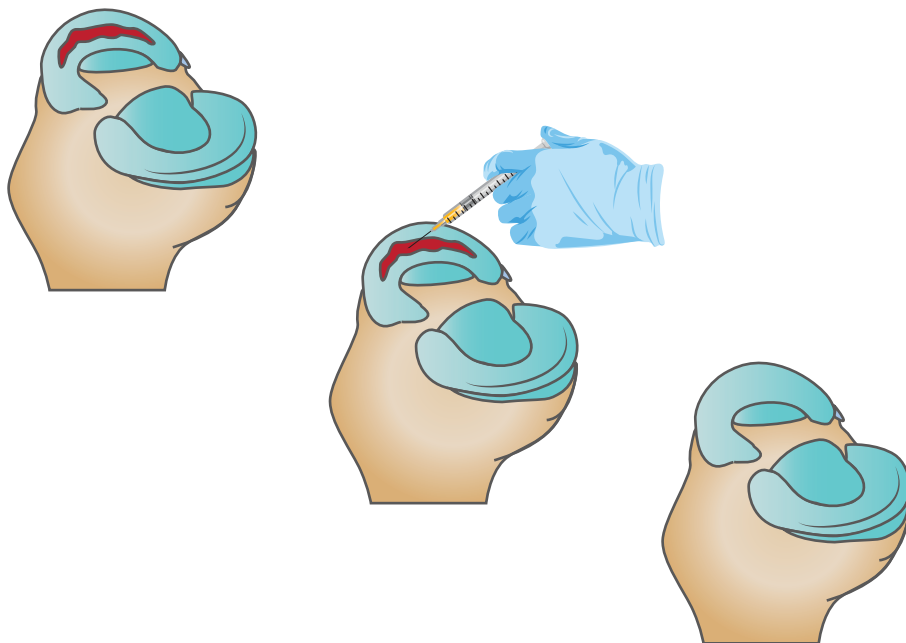


Volleyball

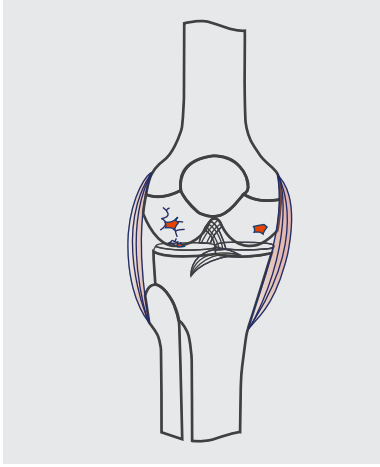
How does TriPreP® Tubex® BMC system help?

Arthroscopic meniscus repair is an outpatient surgical procedure done to repair torn knee cartilage. A meniscus tear normally requires external stimulation of blood supply to heal. It involves drilling holes into tear areas to create new blood vessels, thereby stimulate blood circulation and nourish the affected areas to aid in bone rebuilding. Surgeons also fill these holes with a cocktail mixture of Platelets and Stem cells derived from Bone Marrow Concentrate facilitating accelerated healing and bone regeneration. During this procedure,

Bone Marrow Aspirate drawn from Iliac Crest is processed with our TriPreP® Tubex® BMC kit to produce an enhanced concentrate of platelets, stem and progenitor cells, and injected to defect area encouraging cartilage regeneration and avoid knee replacement. If the damage is extensive, then a new cartilage graft can be inserted to replace the damaged cartilage. The use of stem cells for the treatment of cartilage defects is increasing. Methods of delivery of stem cells to the cartilage vary from direct injection to implantation with scaffolds.



Indications



Osteochondral Lesions

An Osteochondral lesion is a defect in the cartilage of a joint and the bone underneath. Any break, tear, separation, or disruption of the cartilage that covers the bones between joints is referred to as Osteochondral Lesion. In severe cases, the bone right underneath the cartilage will also be injured. The knee, ankle, and elbow joints are common places where this defect occurs. It is caused due to degenerative or traumatic injury and is characterized by pain, stiffness, instability, or a 'locked' feeling.

How does TriPREP® Tubex® BMC system help?

Conventional Treatment Practices

- Physical or Occupational therapy
- Braces or Assistive Devices
- Surgery
 - o Microfracture
 - o Osteochondral Allograft Transplantation (OATS)

Risk factors



Obesity



Old age



Football



Rugby



Golf



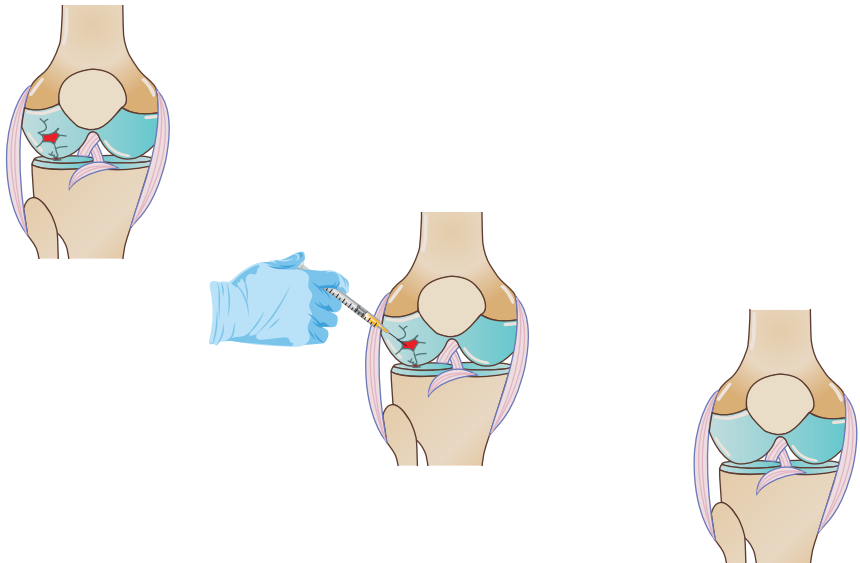
Sports Person



Trauma

How does TriPREP® Tubex® BMC system help?

Microfracture is a surgical procedure performed to promote the healing of damaged cartilage with the use of Stem Cells (progenitor cells of the body). It is usually performed as an arthroscopic procedure. The surgeon will remove loose or unstable cartilage and insert a sharp tool to make several holes in the defect area. These holes penetrate the Subchondral Bone (underlying the cartilage) and open up new blood supply from within the Bone Marrow that supplies the damaged joint surface with new Stem Cells, which fills the damaged area and promotes the formation of new tissue. Similarly, Osteochondral Autograft Transplantation Surgery (OATS), is a Bone/Cartilage transplant procedure used for the treatment of varying degrees of Osteochondral Lesions. This procedure involves inserting new Bone/Cartilage grafts to help regenerate damaged tissue, rather than replacing the joint with an implant. Surgeons typically incorporate Stems Cells or PRP into these holes or grafts to promote faster healing and reconstruction of the injured tissue.



Indications



Traumatic bone loss

A fracture is a broken bone. A bone may be completely fractured or partially fractured in any number of ways. Trauma may cause irreversible bone tissue damage and loss of function. Additionally, trauma activates the immune system, alters stem cell behavior, and impairs healing partially or completely.

How does TriPREP® Tubex® BMC system help?

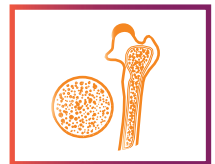
Conventional Treatment Practices

- Plaster Cast Immobilization
- Functional Braces
- External and Internal Fixation
- Traction

Risk factors



Trauma or Accidents



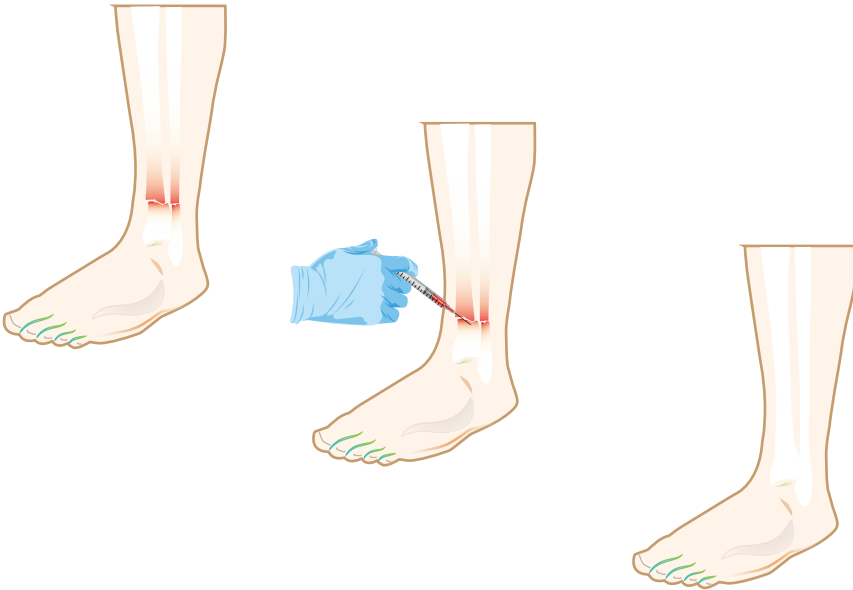
Osteoporosis



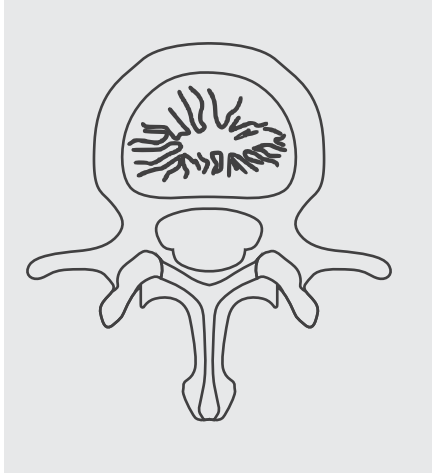
Stress or Overuse

How does TriPreP® Tubex® BMC system help?

Patients with Non-Unions or Bone Fractures exhibit a decreased pool of Bone Marrow-Derived Stem Cells (BMSCs) and Growth Factors necessary for proliferation and bone regeneration. Several clinical studies have shown that employment of stem cells, either alone or with other biological scaffold materials can stimulate healing at the fracture site. Moreover, stem cells are an easy source of osteoblast (bone) progenitors and secrete bioactive molecules that regulate cell differentiation and tissue regeneration. Bone Marrow Aspirate drawn from Iliac Crest and processed with our TriPreP® Tubex® BMC kit can produce an enhanced concentrate of platelets, stem, and progenitor cells to encourage non-union healing with minimal complications.



Indications



Spinal Fusion

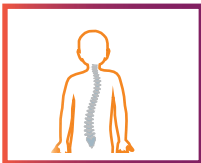
Spinal deformity is an abnormal alignment or curve of the bony vertebral column. Spinal deformities also can interfere with the spinal cord or nerve roots causing permanent changes in strength, sensation and other body functions

Spinal fusion is a surgery designed to join two or more vertebrae to stimulate the normal healing process of broken bones.

Metal plates, screws, and rods may be used to hold the vertebrae together, so they can heal into one solid unit during spinal fusion. The surgeon places

bone grafts or a bonelike material within the space between spinal vertebrae to facilitate accelerated bone regeneration.

Risk factors



Scoliosis



Degenerative
disk disease



Old age



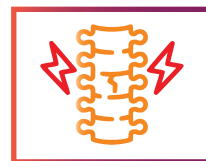
Occupation



Tumors or spine
infection



Spinal
Stenosis



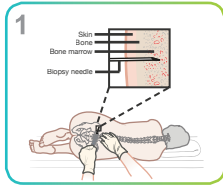
Fracture
or Trauma

How does TriPREP® Tubex® BMC system help?

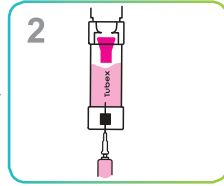
All spinal fusions use some type of bone material, called a bone graft, to help promote the fusion. Generally, small pieces of bone are placed into the space between the vertebrae to stimulate bone healing. It enhances bone formation and helps the vertebrae heal together into a solid bone. Moreover, it provides structural support and shape to the spine. However, even after 10 years, there is still a high chance that grafts may fail to integrate leading to nonunion and late graft fractures. Hence, surgeons usually incorporate a cocktail mixture of Platelets and Stem cells derived from Bone marrow concentrate on graft materials to enhance the effects of grafts by facilitating accelerated healing and bone regeneration. Bone Marrow-Derived Stem Cells (BMSCs) are rich sources of adult mesenchymal stem cells with high proliferative capacity and established osteogenic and regenerative potential. During this procedure, the Bone Marrow Concentrate processed with our TriPREP™ BMC kit is implanted into the defect area to encourage the longevity of grafts and treatment benefits.



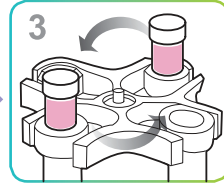
How it is prepared?



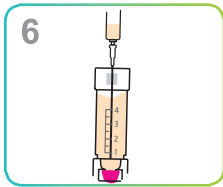
Bone Marrow Aspiration



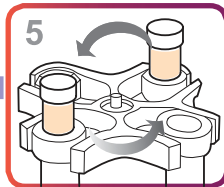
Inject blood/BM into Tubex



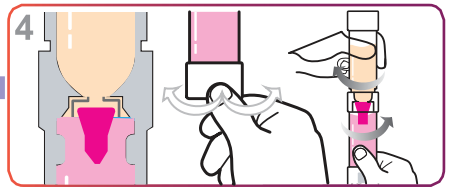
Adjust RCF value and time for 1st centrifugal separation



Extract PP above 2mm first, and then extract PRP/BMC under 2mm



Adjust RCF value and time for 2nd centrifugal concentration



Turn the bottom cork to adjust red-blood-cell level to meet blue line (left : down, Right : up)
Not to mix the red-blood cell and plasma, lock the middle valve. *(Hold the lower chamber and turn the upper chamber to the left side)*

What makes us unique?



4-5x times increased Cell Load from Baseline



Customizable Bone Marrow Concentrate



100 % Sterile with In-Built Filter System



Adjustable Buffy Coat and Cell Load



CE, FDA & ISO Certified Cell Concentration Kit

Our other products:

TriPREP[®]
Tubex[®]
Premium Cell Therapy Kit for
Point-of-Care Biologics Injection



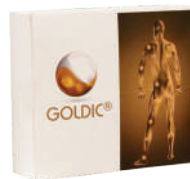
TriPREP[®]
Tubexplus⁺
(Leukocyte Depleted PRP Kit)



TriPREP[®]
HyoPREP[™]
(HA + LP-PRP OA Repair kit)



GOLDIC[®]
The next generation regeneration therapy



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